MASSAGE AND ITS APPLICATIONS.

(2)

A Concluding Lecture

DELIVERED TO

NURSES AND MASSEUSES,

AT THE

School of Electricity and Massage in connection with the West-End Hospital for Diseases of the Nervous System, Paralysis, and Epilepsy, 73, Welbeck Street, London, W.

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PREFATORY NOTE.

Our Students have asked me to publish this lecture: and I am glad to do so.

In it, I endeavoured to draw attention to the *essential* details of the "Massage Treatment," which we had studied and carried out during the preceding six months' course of Lectures and practice.

I have also added, in a "*Postscript*," certain anatomical notes more especially applicable rather to "*Massage*," than to Electricity.

H.T.

School of Massage and Electricity,
73, Welbeck Street,
London, W.
September, 1887.

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THE HUMAN BODY.

This Figure exhibits a Dissection of the Body, showing upon the right limbs the muscles, and upon the head and left limbs the superficial arteries and veins. The chest and abdomen are laid open to show their contained organs. The student is recommended to study the figure *through a good magnifying glass*, and to study it very carefully and fully, so that the *relative position* of the various organs of the body may be firmly impressed upon the memory. As far as a general idea of relative anatomy may be learnt from a picture, it is believed that it may be learnt from this one, as it was photographed from an actual dissection, and then engraved: but as the author *has again and again* advised, *all* Students of Massage and Electrical Treatment should attend a course of practical demonstration upon the dissection of the Human Body at a recognised Medical School, as indeed some of them are now doing.

A—The right lung.
B—The left lung.
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D, D—The diaphragm.
E—The liver.
F—The spleen.
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J—The bladder.
K, K—The colon, or large intestine.
L—The larynx, or organ of voice.
M—Cut muscles of the abdomen.
N—The pubes.
P—The pericardium.
S—The stomach.
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*—The tip of the sternum.
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O—Annular ligament of the ankle.
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s, s—Great saphenous vein.
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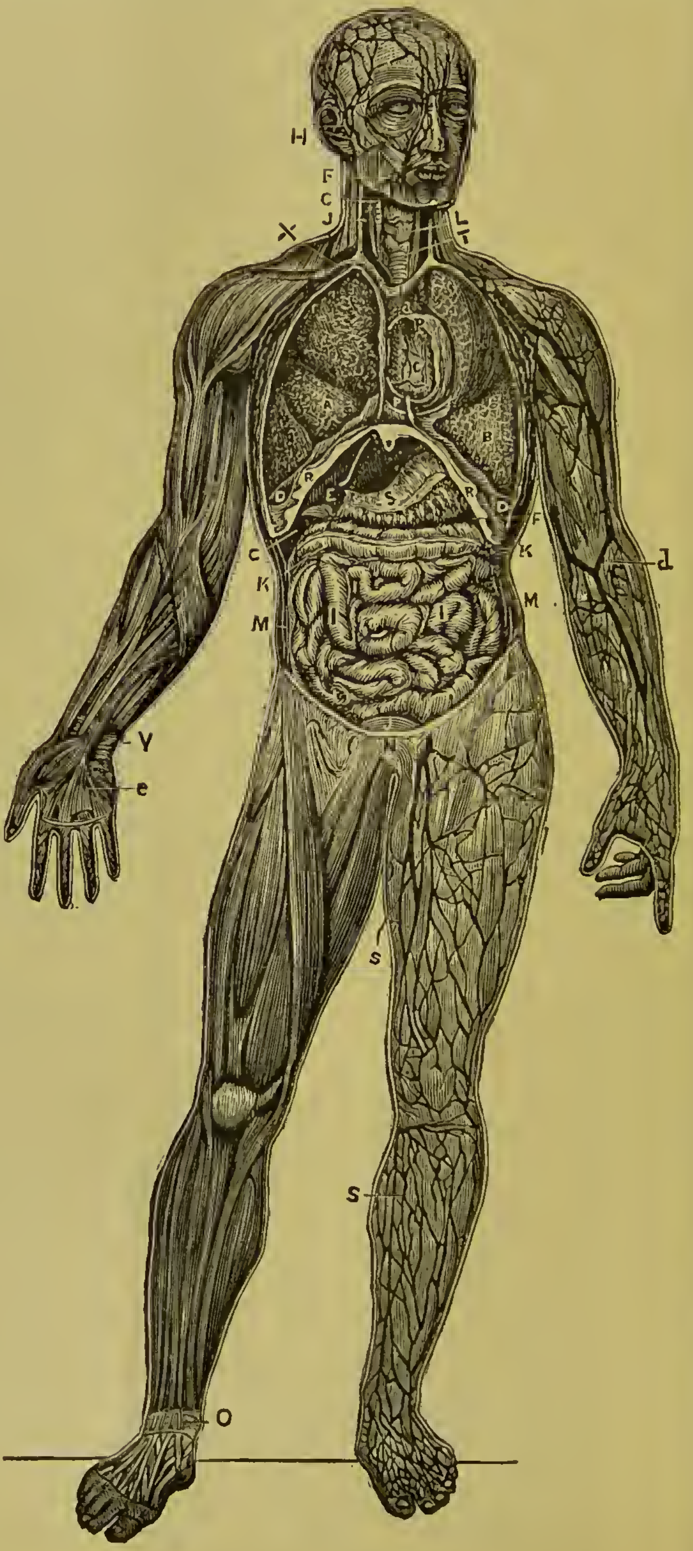

MASSAGE AND ITS APPLICATIONS.

A Concluding Lecture.

We have to-day concluded our six months' course of lectures.

You may perhaps recollect that in my introductory Lecture* I sought your attention (of course in that Lecture only), not so exclusively to the medical aspect of the methods of treatment taught at our School, as to the prospect held out of an honourable and remunerative career for educated women, possessing some aptitude for nursing.

At that time the matter was somewhat in the nature of an experiment. Then we had about a dozen students; now we have fifty, and our School is an established success.

I propose, to-day, to take a rapid, but I hope useful, survey of our past six months' work.

You are of course aware that the treatment which we have so especially adopted; which may be called the "*local treatment*" of disease, as distinguished from mere physic drinking, has recently made much progress.† Regarded at first by the medical profession with aversion, it has gradually but surely made its way: and now the chief leading Physicians and Surgeons are numbered amongst its warmest advocates. Weir Mitchell, of Philadelphia, upon whose system ours is engrafted, writes as follows:—"I do not wish to be thought as putting forth anything very remarkable or original in treatment by rest, systematic feeding, and passive exercise. All of these have been used, but as a rule, one or more without the others; and the plan of combining them does not seem to be generally understood."

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* "Medical Galvanism."—An Introductory Lecture delivered to Nurses and Masseuses, at the School of Massage and Electricity, in connection with the West-End Hospital for Diseases of the Nervous System, Paralysis and Epilepsy, Welbeck Street, London, W.

† The other day Sir William Gull spoke as follows:—"Disease is not cured by drugs. How many doses of medicine did the Prince of Wales take when he was ill with typhoid fever? Not four. It is the power of nature that cures disease; and the duty of the Medical Man is—not to give drugs—but to assist Nature."

So spoke Sir William Gull, And Lord Coleridge, deciding a law case not long since, said:—"If you give a man drugs, you make him the arena of a conflict of opposing poisons."

It is the verdict of the medical profession, all over the world, that "although Mitchell's method was not new in the sense that its separate recommendations were made for the first time, it *was* new in the sense that these recommendations were, for the first time, combined."

To the Weir Mitchell treatment we add the various methods of Medical and Surgical Electrization, Ling's system of Medical Gymnastics, (known as the "Swedish Movement Cure"), Dr. Mortimer Granville's Nerve Excitation, and the methods of Massage taught by Metzger, Mozengeil, and other well-known Continental Authorities: and our Hospital stands quite alone—I believe in Europe—in having associated with it a School attended by numerous Students (and we have two who have journeyed from America) who are carefully and thoroughly trained, who attend daily to Massage, Electrize, and apply other methods of local treatment as directed by, and under the supervision of the Medical and Surgical staff, and who, at the end of their training, and after passing a written and practical examination, receive Certificates that they are "*competent to apply Massage and Electricity under Medical Authority.*"

The combined methods to which I have briefly referred are essential to the most successful treatment, not alone of all diseases of the Nervous System such as Paralysis, Nervous Exhaustion, Neuralgia, &c., but to all other diseases where debility, weakness, and fatigue are prominent, and one object of this Lecture is to recapitulate, and—so to say—to consolidate the knowledge we have acquired during the past half-year.

Modern Massage. "Scientific Massage,"—the Massage of to-day—may be defined as "The Art and Science *of medical rubbing, combined with various manipulations and exercises by the operator upon the whole or a part of the body of the patient*, added to certain other exercises *executed by the patient:* and to certain associated methods of purely local applications made by the operator."

The above definition is somewhat "misty," but exact definitions are always difficult: and it probably covers the ground fairly well.

Unscientific Massage was practised long ago. The Chinese used it. The Greek Fathers of Medicine advocated it to restore health to the sick. The Egyptians employed it, not only as a remedy in disease—but to add flesh to those ladies, unduly thin, and to take it away from those too generously gifted.* Next the Romans adopted it: and after the fall of the Roman Empire, the Arabs, those inheritors of most of the ancient arts, kept it from oblivion, and so it descended to us.

As with all other things now-a-days, so with Massage. It runs the risk of being smothered in a multitude of words signifying nothing, and out of a simple thing a mystery is made. The principles of Massage may be learnt in an hour. *To acquire its practice takes months.* ALL modern books on Massage are really copies, *with much padding and useless irrelevant matter*, from Mitchell, who may be fairly called the "*Father of Modern Massage.*"

Mitchell defines his method of treatment as follows: "The patient lying in bed the manipulator starts at the feet and gently but firmly seizes the skin, rolling it lightly between his fingers and going carefully over the whole foot: then the toes are bent and moved about in every direction, and next with the thumbs and fingers, the little muscles of the foot are kneaded more largely,and the inter-osseous groups worked at with the finger tips between the bones. At last the whole tissues of the foot are seized with both hands and somewhat firmly rolled about. Next the ankles are dealt with in like fashion, all the crevices between the articulating bones being sought out and kneaded, while the joint is put in every possible position. The leg is next treated first as to the skin, then by deeper grasping of the areolar tissue, and last by industrious and more profound pinching †

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*And this is sound physiology. Exercise will make the thin grow stouter: the stout grow thinner: and one of the greatest advantages of Massage is that while permitting all benefit from perfect rest it yet gives every good that can result from exercise. *This is the secret of its success in certain "isolation cases."*

†The word "pinch" is here used for lack of a better. It is, oddly enough, associated in the minds of many persons with the idea of pain, which of course, is not borne out by its true meaning. The process here described is such as I have seen used by one of the most skilful of Masseuses.

of the large muscular masses, which for this purpose are put in a position of the utmost relaxation. The grasp of the muscles should be firm, and for the large muscles of the calf and thigh both hands should act together, the masses of muscle being as it were twisted around the bone, while the hands alternately contract on them. In treating the firm muscles in front of the leg, the fingers or the two thumbs are made to roll the muscle under the cushions of the finger tips. At brief intervals the manipulator seizes the limb in both hands and lightly runs the grasp upwards, and then returns to kneading the muscles."

"The same process is carried on in every part of the body, and especial care is given to the muscles of the loins and spine, while usually the face is not touched. The abdomen is first treated by pinching the skin, then by deeply grasping and rolling the muscular walls in the hands, and at last the entire belly is kneaded with the heel of the hand in a succession of rapid, deep movements, passing round in the direction of the colon, while somewhat later the whole belly relaxed by position, may be shaken by a rapid motion of the grasping hands. Pinching or squeezing of the skin is very valuable in certain spinal troubles accompanied with lessened sensation, and in some other cases, if the surface and extremities be very cold: but the best Masseuses often omit it, and rely solely upon the deeper grip and rolling of the muscles. The process should not be painful or more at first than merely fatiguing: but after a time the muscles may be handled with a good deal of strength without causing other than agreeable results, If the grip be allowed to move much or roughly over the skin the pull upon the hairs may cause boils. A little cocoa-oil or vaseline may therefore be used if necessary. Too much care cannot be used to cover with stockings and warm wraps the parts after in turn they have been subjected to Massage. As to time: at first the Massage should last half an hour, but should be increased in a week to a full hour. Sometimes I use it twice a day, but commonly one hour suffices. Women who have a sensitive abdominal surface, have of course to be handled with care, but in a few days a practised rubber will by degrees intrude on the tender regions. and will end by kneading them with all desirable force. The same remarks apply to the spine when it is hurt by a touch: and it is very rare indeed to find persons whose irritable spots can not at last be rubbed and kneaded to their permanent profit. The daily Massage is kept up through at least six weeks, and then if everything seems to me to be going on well, I direct the rubber or nurse to spend half of the hour in exercising the limbs as a preparation for walking." *So writes Weir Mitchell.*

The words I have just read to you are indeed Massage *words of wisdom.* They come from the man who thirty years ago *first* advocated and has since continuously practised scientific Massage: and as they were only *re-published a year ago*, they contain the very cream of the whole matter, and remember, before their re-publication they were *undoubtedly* carefully reconsidered by a man possessing such a reputation as Weir Mitchell, as to whether he should add to them. Need I say that his experience has surpassed that of all of his disciples put together — and what do we find? He uses simple language. He describes the treatment he advocates in words "understandable by the multitude." The word "*Mesopotamia*" is not to him, as it was to the poor, old dying body—'a word of comfort,' though it would seem to be so to some of his followers! He does not mystify an admirably simple and useful method of treatment by clothing it in a gaudy uniform borrowed from the French. He says nothing about "*Friction*," "*Effleurage*," "*Tapotement*," "*Petrissage*,"—nor does he even in his own language talk about "spanning," "rolling," "sawing," "stroking," "felling," "chopping," and the rest of it. In simple language he describes the treatment: and above all he is entirely silent as to that most pernicious suggestion which has been advocated by some writers upon Massage that the mind or will, of the Masseuse "*might, or could, or would, or should*" re-act upon the mind or will of the patient!

For some time past I have been anxious to speak to you very seriously upon this aspect of the question. Although a certain number of the general public may seek your services as Masseuses, *your* success, and the final, and I hope great success of this School, will depend not so much upon your being thoroughly qualified for your work, as upon whether or not our School secures the thorough confidence and support of the medical profession. That profession looks with wise suspicion upon new things and new undertakings. It holds aloof at first and waits: but if satisfied that the new thing is a good thing—a thing good both for Medical men and their patients—a thing without a taint of even *suspicion* of Quackery about it—it sometimes comes to its support with energy and kindness. So will it be with our School if you will do as I want you to do. Take my word for it—If the Medical Profession suppose for a moment that this School supports any theory of "Moral or Mental Massage" they will stand aloof from us.

On the part of the School I entirely repudiate any such theory.

But you must not misunderstand me. No one can more thoroughly recognize than I do, the power of sympathy, the wonderful influence for good upon a patient, if he or she believes that the *first* desire of the Doctor and the Nurse is to cure their patient. (And patients are very acute in such a matter, and quickly see how the land lies.) What did Sir John Lubbock say at Charing Cross Hospital—and his remarks are, to a large extent, as applicable to Nurses as to Medical Men:—

"Physicians (he said) are successful not merely from their technical skill and knowledge of medicine, but from their knowledge of human nature—*from their tact and kindness.* The best physicians of the day are remarkable, not more for their medical knowledge and skill, than for their charm of manner, their human kindness, their warm sympathy with suffering. One man will do more without a single dose of medicine than another can effect with the whole *Materia Medica* at his disposal. The wise physician is not merely a dispenser and selector of drugs, or a skilful operator. He is the family friend, the trusted adviser, the counsellor and comforter in many a trouble and anxiety."

So say I. That influence, tempered of course by surrounding circumstances, I cordially support, but that influence is *not* the influence against which I have felt it my duty to enter an earnest protest !

All remedies depend for good or evil upon two principles. Firstly, whether in the individual case, they should be administered at all; and secondly, it being granted that their administration is called for, the mode in which they should be given, and, above all, the DOSE. If this were not so, anybody could qualify as a Physician by reading a book. Take, as an example, a dose of Morphia—what shall be its strength ? Shall it be administered by swallowing, and so really being digested and absorbed in the stomach, or shall it be injected under the skin of the arm, and so be absorbed at once into the system ? Again, take Electricity ? What variety shall be employed—Of what strength? How frequently? What shall be the duration of each application? Lastly, take Massage: and the questions I have just submitted to you, apply equally to it as to Electricity. —With both, the *Dose* depends upon the power of the application and upon its duration. With both, you may either soothe or excite, either stimulate or exhaust: and therefore as much as in the administration of any drug you must carefully regulate your *Dose*. With Electricity the Doctor can tell you the dose to apply. He can direct you the exact strength and the exact method of application, and the exact duration, but with Massage he cannot do this. He can direct the method and the duration, *but he cannot direct the strength*, and that is all important, for the Masseuse is not a machine—her "Massage Grip," must depend firstly and chiefly upon whether she possesses sense or no sense; upon her bodily strength; upon her state of health; upon whether she has had large practice; and has been properly taught, and upon whether she possesses a conscience and will do her work or shirk it; and here comes in the importance of practice. As Demosthenes said about oratory: "Firstly, Action; secondly, Action; thirdly, and always Action."—So say I about Massage:—"Practice," "Practice," "Practice!" And I would especially impress upon you the varying susceptibility of different patients to different degrees of Massage strength. With all patients begin with low power. You can always put more power into your elbow, or rather I would say into your hand and fingers.

I differ altogether from the common belief of medical men that it requires more skill to adequately apply Electricity than it does to apply Massage, and my reasons I have just stated to you. For its adequate application, or for its most perfect application, the qualities possessed by women rather than the qualities possessed by men are required; the *sensitive* rather than the *strong* hand, and patience, kindness, tact, and sympathy.

I have already repudiated the theory that the strong will of the Masseuse should exert an influence upon that of the patient, but supposing that evil doctrine were admissible, I apprehend that:—

> "If a woman will, she will, you may depend upon it.
> And if she won't, she won't, and there's an end on it."

There is only one respect in which a Masseuse is distinctly more difficult than a Masseur. No woman was ever yet born who would do exactly what she was told; and if our School can alter that dispensation of Providence, it will have worked a miracle in this nineteenth century!

I hold to the opinion which I read the other day, that when a doctor and a nurse think they are "*managing*" an invalid nervous, suffering woman, you may depend upon it that in nine cases out of ten they are "mismanaging her."

But to return:—So much for general principles! Weir Mitchell does not in his printed works, give complete instruction. Perhaps because he knows that these matters cannot be learnt from books. I quite agree with him. But still, after thorough work in the Hospital Wards, the Student may be materially assisted by a concise description of the details of manipulation which have previously been practically demonstrated.

I therefore proceed to describe general Massage as used at our School. By "General Massage" I mean Massage of the entire body. When partial Massage is ordered, of course only that prescribed by the medical attendant will be carried out; but the following general description will include all minor variations of the treatment.

The principal processes of Massage are generally called "*Friction*" or rubbing, "*Effleurage*," or tickling, or lightly squeezing. This generally means confining the Massage to the skin. "*Tapotement*," or tapping, and "*Petrissage*," or kneading, with many minor sub-divisions of these four, with which I need not trouble you. You must however regard them as general terms rather than precise definitions, for no two writers on Massage exactly agree in their explanation of them. These methods have by other writers been called: "*Frictions*," "*Percussions*," and "*Movements*," with similar unnecessary minute sub-divisions.

"*Friction*" may be light, moderate or strong. Light friction has a tranquilizing, soothing effect. It will not unfrequently relieve a nervous headache, or send a restless patient to sleep. Moderate friction is a moderate stimulant. It stimulates the circulation of the blood in the capillaries, and produces a feeling of warmth, and the skin is slightly reddened. Strong friction is a powerful stimulant of the cutaneous nerves, arteries and veins, and if applied too forcibly a discolouration or bruising of the skin may result from the rupture of the capillaries. You must remember that there is a vast difference in the delicacy and sensitiveness of the skin in different patients. Friction causing hardly any sensation with one will give rise to pain with another. Of course we know the skin of a woman is generally more delicate than a man's, and you may remember Carlyle mentioning that while the tanned skins of the men guillotined during the "*Terror*" in the French Revolution, made leather most useful for covering saddles, the skin of women could only be made into inferior gloves, which the gentler sex of the great unwashed of that day, complained were constantly splitting. But still this variation in skin texture is not universal, and some men have skins quite as sensitive as women's. In many cases a flesh glove or a hat brush is more useful in friction than the hand.

"*Effleurage*," as I have said, means tickling or lightly squeezing or rolling the superficial layer of muscle, and is of little value except as a relief both to the Masseuse and patient, and a useful variation during a prolonged Massage from the more powerful applications.

"*Tapotement*" or "*Percussion*" means tapping or striking with different degrees of force, and either by the hand or fingers, or by an instrument, upon the surface of the body. Instruments used are a sheep's bladder blown full of air, fastened by a short string to a short stick or handle, and used as a kind of flail; an india-rubber air ball fixed to the end of a piece of cane—which possesses, as you know, some elasticity; a ball covered with wash leather, stuffed with wool, and also fixed to a handle of cane; and a bundle of birch branches damped in water; but you will very seldom need any of these appliances, and it is far better to depend upon your own hands. Slight percussion may be made with the point of one finger or the points of the four and the thumb brought together; stronger by the ulnar side of the hand, holding the fingers apart or together as desired, or by the knuckles, or the palm, or the partially closed hand, or by the clenched fist, which last of course is the most powerful. The Percussion should be made quickly and with decision. Generally one hand only is used, but now and again, both may be used, or they may be used alternately; percussing first with one hand, and then with the other. With Percussion, especially, you should remember to begin with low power which, if necessary, can be increased.

"*Petrissage* or *Kneading*" is far more important than all other processes of Muscular Massage put together. *It is by far* *the most essential part of the treatment.* It cannot be better described than by saying that it consists in the most complete and most thorough kneading, with both hands, of the muscles or other organs operated upon—upon the principle, and very much after the manner in which the baker kneads dough. No amount of description or demonstration can teach you more. It is by practice only, that you can acquire it, and I may add that it is chiefly by superior dexterity in Petrissage that one Masseuse is superior to another.

So much for general details. The methods I describe are applicable, of course, to the surrounding skin muscles and tissues of a joint, but in Massaging joints themselves, other exercises are impressed upon them. As I have already told you, the movements executed by joints are flexion, extension, abduction, adduction, rotation, circumduction, pronation, supination, and to some degree, lateral movements. In general massage you exercise upon a joint the movements natural to it, and in this there is no difficulty; but the matter is altogether different when the joint is diseased, sprained, or otherwise injured. Although in what are called "joint cases" surgical opinion has greatly changed of late, and the "rest treatment" of an inflamed joint has largely given way to the combination with it of occasional massage; still, joint affections are so serious, that I can only advise you to never undertake them without explicit directions from the medical attendant as to the exact *direction* and degree of strength with which he desires the joint to be moved. The only other movement in addition to the movements just named is called "*Traction*," which is a movement used on the articulation by pulling one part while supporting the other, or by pulling one part in the opposite direction to the other. Tractions are especially used in sprained joints to faciliate the re-establishment of the soft parts which may have become misplaced.

And now I will shortly recapitulate a complete Massage of the body, but I do not advise that you should, upon *every* occasion employ all the varieties of manipulation I am about to describe; but you *must* know how to use them all if desired.

Continental Authorities recommend that you should always begin at the foot and work upwards, because in many cases there will be found some weakness in the circulation, and upward pressure will—it is said—assist the return of the venous blood to the heart. I do not myself attach much importance to this theory, and it matters little where we begin.

Let us then commence with the right foot.

Apply Friction to the toes, arch of the foot, and as far as a little above the ankle joint. Then, holding the metatarsus with the left hand impart every possible movement to the four outer toes together and separately—kneading them thoroughly. Do the same with the great toe. Thoroughly knead the muscles of the foot and continue to lower part of leg. Grip the leg above the ankle, and execute upon the ankle joint all its movements. Then similarly operate upon the leg to about the lower third of the thigh—so as to influence the muscles throughout their entire course from their origin to their insertion, You will observe that some muscles have their origin above, and their insertion below the knee. So on with other joints.

Then treat the calf muscles. Then massage the knee joint. Hold the leg below the calf with one hand and apply the other to the lower and back part of the thigh. Then apply flexion, and with one hand raise the thigh moderately, and with the other bring back the leg towards the buttock. Then with one hand hold the lower extremity of the thigh and the knee, while in the palm of the other hand you place the heel and give a firm resting place for the bottom of the foot and toes along the fore-arm. Then press gently on the knee while pulling towards you and at the same time raising the heel, you draw the leg out to its length. Then massage the muscles of the thigh following them from their lower insertions either from the shin bone or the knee-pan to their higher insertions into the thigh or the Iliac bone. You then massage all muscles from the waist downwards —working upwards as before. Then, one hand holding the seat and supporting the back, the other hand takes hold of the heel and raises the lower part of the thigh while the leg bends on the latter. Flexion obtained, you replace the leg length ways, and with one hand always supporting the seat, you draw downwards the lower part of the thigh which is held as if for bending. For circumduction movements on the thigh, you place one hand on the seat as before. Tell the patient to half bend the thigh, so that when you place the other hand on the bended knee you execute circumduction, abduction, adduction, &c.

Repeat the massage as just described upon the entire left lower limb.

Then the lower limbs being warmly covered the patient being placed upon the back in a semi-recumbent position the knees slightly raised so as to relax the abdominal muscles, you first employ friction, then percussion, and then deep and thorough kneading of the entire abdominal contents, pressing both hands, sometimes open, sometimes partly open, sometimes quite closed well into the tissues. If you specially wish to massage any one of the contents of the abdominal cavity, you concentrate your manipulations upon the region occupied by the organ upon which you desire to act:—*e.g.* for the large and small intestines you massage the lower part: for the stomach the upper: if the liver the upper right hand: if the spleen, the upper left: but you can not concentrate massage upon any one of these organs without influencing the parts adjacent because of the thick cushion of muscle, &c., interposed between you and the organ you desire to influence.

Then the abdomen and thorax being warmly covered, commence to massage the fingers of the patient's right hand. Take each finger separately by your thumb and fingers, and treat it as you did the toes. Then grasp the entire four fingers and flex and extend them *en masse*. Then take each finger separately between the thumb and fingers of your left hand, and hold it firmly. With your right hand—between its thumb and finger—take the end of each finger: flex, extend, and slightly rotate it. Deal separately with the thumb in like manner. Then treat the carpus and metacarpus exactly as you did the tarsus and metatarsus in the foot. Treat the wrist joint as you did the ankle joint, the forearm as you did the leg, the elbow as the knee, the arm as the thigh, and the shoulder as the hip. That is you hold the forearm just above the wrist and execute all movements of that joint. Grasp then the arm with your left hand, and with your right hold the forearm a little above the wrist. Flex, extend, pronate, and supinate it. Treat the arm muscles and the muscles in front, the muscles of the shoulder, and the corresponding muscles of the upper part of the back in like manner. Then by the left hand take hold of the upper part of shoulder, and grip the arm with the right a little above the elbow and make all movements as in other joints.

You repeat all we have done with the right upon the left upper extremity.

The patient then lies partly reclining on his back, and slightly lying on the part not to be first Massaged. Treat the neck and muscles upon the side we are Massaging just as we have treated other regions, Then treat the other side similarly. Then put the patient semi-reclining upon his stomach and thoroughly massage the muscles of the back of the neck and all down the spine, paying especial attention to the muscles of the lower part of the spine and the loins. In general Massage, massage of the face is seldom required: but if so, you carry out the treatment we have used upon other regions of the body, paying especial attention to gentle friction from the forehead downwards.

The *combinations* of Massage and Electricity (either separately or together), with various baths, are, in certain cases, distinctly advantageous.

At Aix-le-Bains the "*Massage Douche Bath*" has been very popular and successful; and by the courtesy of Dr. Bracket, and my old colleague here, Dr. Wakefield, Physicians to the Thermal establishment, at Aix, I was shown over them a short time ago. They certainly surpassed any other baths upon the Continent in the completeness of their appliances for the treatment of diseases of the nervous system.

Their "*Massage Bath*," is administered under several forms. The patient has sometimes two jets of water playing upon him, and he is, at the same time, massaged by two masseurs. This is a "*Double Massage Bath.*" If with one jet only, and one masseur, it is a "*Single Massage Bath.*" Another method is to carry out the different manipulations of massage while the patient is reclining in an ordinary warm bath; a fourth method is to massage the patient with hands thoroughly moistened; and a fifth (originated by myself), is to cause the body to be sponged over with *very* hot water, *before* and *after* massage. This last method must not be confounded with the ordinary processes conducted at Turkish bath establishments.

It is *essential* that the water should be *boiling*; that (as I tell my patients who carry out treatment at home) the "kettle should be boiling on the fire, and the steam issuing from the spout." Then if a sponge is placed in an empty basin, and if only so much boiling water be poured upon it as will moisten it, it may be taken in the hand of the operator without danger of scalding him or the patient, and the part about to be massaged may be sponged without fear, but *with discretion.* The *essence* of the treatment is the application of very hot water; of water so hot as to distinctly and largely redden the skin. This method was suggested to me some years ago by Sir James Paget, and I have since largely employed it with the best results.

So much for Massage. Let us now shortly recapitulate Ling's system, or the Swedish movement cure. Ling died in 1839. He thus describes his system :—The "oneness of the human organism, and the harmony between mind and body and between the various parts of the same body, constitute the great principle of my Gymnastics. Gymnastic movements are movements which differ from movements in general in this—that though the latter require space and time—they do not require a determinate space, and a determinate period of time and degree of force. It is this settled and definite amount of space and time in which the movement is to be done, as well as the determinate degree of force with which it is done, that enables us to influence the body, or a single part of it, in the manner necessary for our special purpose. To raise the arms in a loose random way without thinking, and to stretch them in the air, can have little corporeal effect and certainly no mental one: but to stretch the arms in a manner and direction, and with a velocity and force, all previously determined, and exactly prescribed, and then to move their different parts (upper and fore arm, hand and fingers, &c.) precisely as determined, and commanded, this is a *Gymnastic Movement.* To make friction along the course of a certain nerve, vessel or muscle, or an entire limb, or any other part of the body, with a gradually increasing or constantly equal pressure, in a slow or quick time, more or less frequently repeated, in shorter or longer intervals, in a determined form, &c,, according to a previously prescribed manner, is another instance of a Gymnastic movement.

Every Gymnastic movement has :—

1.—*A commencing position.*
2.—*An intermediate position.*
3.—*A final position.*

Supposing I stretch my arm out straight from the shoulder, the palm of the hand being upwards. That would be "a commencing position." The forearm bent at a right angle would be "an intermediate position:" the forearm bent to an acute angle, the fingers then touching the shoulder, would be "a final position." The movements just demonstrated constitute "Forearm Flexion." When extension instead of flexion is required, the process is reversed. The previous *final* position is the *commencing* position—the previous commencing position becomes the final one, and the intermediate position remains the same in both.

"Active Movements" are those made entirely by the patient.

"Passive Movements" are made entirely by the operator.

"Half Active or Combined Movements" are a combination of active and passive movements. The patient is permitted to originate the movement: or to "give the impulse:" but he is not permitted to determine the direction and time. On the other hand he may be permitted to resist and to determine the direction and time, while the operator gives the impulse and force.

The names of the principal movements are—"flexion, extension, felling, twisting, turning, pulling, pressure, separation or abduction, bringing together or adduction, guiding, posture, walking, spanning, lifting, overturning, balancing, stroking, sawing, kneading, tapping, chopping, &c."*

As you are aware, we also employ the important and very philosophical method of treatment originated by Dr. Mortimer Granville: but time will not allow me to enter upon that subject to day. I must however be permitted to say how greatly indebted I am to Dr. Granville for his kindly courtesy in placing at my service the woodcuts illustrating his work,† and I propose not only in the Third Edition of my Treatise on Medical and Surgical Electricity to enter fully into this matter, in the part which will be devoted to "*Massage and Allied Methods of Treatment*," but to consider it also in my forthcoming "Handbook upon Massage."

And now, to again recapitulate, or rather, emphasize our treatment. *Its essence* for good, consists in its *combinations;* but it has latterly been repeatedly brought home to my mind whether the *isolation part of the treatment* has not been somewhat carried to too great an extent. Many of you have had experience of this—unless I am much mistaken. There can be no possible doubt that with suitable patients this isolation is *essential*, but the patients *must* be suitable: and really the present tendency of treatment would seem to me to be to bring patients to the treatment, not the treatment to the patients.

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*Ling's system is exhaustively considered and described in Dr. Roth's "Handbook of the Movement Cure," 1856. Balliere, Tindall, & Cò., King William Street, Strand.

†NERVE-VIBRATION AND EXCITATION, as agents in tho Treatment of Functional Disorder and Organic Disease. By J. Mortimer Granville, M.D. London, J. & A. Churchill, 1883.

I had, the other day, a very singular "case." The patient, a young man, was suffering from general nervous weakness, with the symptoms customary in such patients. Upon examing him I found, in the abdominal region a blue cicatrix. I said "You must have met with some accident here." But he had not!

We have heard a good deal of "*Abdominal Surgery*" in women, but this was the first case I had met with in *Man!*

An operation had been executed upon him, and *some* portion of his abdomen had been cut into surgically, to find out what there might be inside!

I propose now, and very shortly, to ask your attention to those classes of disease, which although not the *monopoly* of women, count them among their largest number of victims. Organic diseases of the nervous system are common to both sexes alike, but functional diseases of that system always have been, *now are*, and always will be, the special scourge of women. The greater delicacy of their organization: that intimate relation and sympathy between their nervous system and their sexual functions, whether the latter may be in activity or abeyance; if in activity the occasional *want* of nerve power; if in abeyance, the occasional *superfluity* of that same power, alike conduce to a disturbance of that perfect equilibrium, which is essential to a quiet, not to say a vegetative life, and to that blissful ignorance, possessed, alas! by so few of us, that we possess nerves and a nervous system.

I would desire to point out to you the too little recognized importance *of immediate and adequate treatment* in those less serious cases, which although not involving immediate danger to life, yet involve much misery to the unhappy sufferer, and *immense* misery (hardly to be adequately expressed in words) to all her surrounding relatives and friends. And in this connection I would ask you to allow me to enter my protest against that refuge for destitute physicians and surgeons—the word "HYSTERIA!" *What does it mean? What do you understand* *by it?* I have looked up many definitions of it from all writers of repute, and I will not give you any one of them. *The thing is non-existent.* The word is, as I have said, a refuge for destitute medical practitioners, who having to do with dreadfully harassing cases of functional nervous disorder, take "*Hysteria*" as their motto and as their shield, and retire—or do not retire—from the case under its shelter.

Before proceeding I must again ask your attention to the nervous system. That the brain is the organ of the mind cannot be doubted, for the mental faculties depend upon its healthy condition. When it is removed, an animal exhibits neither memory nor will. If it is compressed, or seriously injured, mental power is destroyed. If congested by too much blood, or impoverished by receiving too little, the mind wanders, and the intellect is lost.

What is the agent by which the will, holding its habitation in the brain, transmits its various messages along the nerves? No one can say! and therefore we have fallen back on a *name*: the *Vital Principle*. But what *is* that "*Vital Principle?*" . . . Whatever it is, when it is diminished in quantity or power, *fatigue is induced*, sleep follows, and during sleep this principle is re-developed in the brain, and we awake refreshed; that is, supplied with a new store of vital principle.

I believe this Vital Principle to be a condition of animal electricity, yet to be discovered and demonstrated, and that it will more nearly resemble the charge of Static Electricity, ("Franklinism") than any other variety of electricity.

We know that currents of electricity (generated perhaps by the friction of the stream of blood against the coats of the arteries) are always present in the body. When we are awake, when we are undergoing the wear and tear of our daily life, that supply of vital energy, that supply of electricity stored up and accumulated during sleep is used up; is exhausted. We sleep again; and during that sleep, by a merciful dispensation of Providence, our "*Fund of Vital Energy,*" or vital electricity, *(call it what you will,)* is re-established, and we are again enabled to bear the heat and burden of the day. The condition described as "Neurasthenia," is, in reality, a disease of the nervous system; and it has been stated that one half of all women suffer from it, but that is an absurd statement. It is really a condition of nerve weakness and nerve irritability, modified in woman generally, but not always, by an additional emotional element. It is not confined to any one class in society, and is as common in Whitechapel as in Grosvenor Square.

All uterine derangements are apt to be accompanied by it; and the symptoms are liable to be aggravated during the menstrual period; and you must remember that it may also be acquired by those predisposed to it from imitation of others. It is common for every faculty to become exalted; hearing, smell, taste, touch, and sight sometimes become preternaturally acute, and sensations, which to those in health are indifferent or pleasant, produce in the neurasthenic, the highest degree of discomfort; and conversely, sensations disagreeable to others may be enjoyed by them. Neurasthenic patients often complain urgently of neuralgic pains in various part of the body and without any recognizable cause. Neuralgia of the mammary gland is sometimes complained of, while a fixed and severe pain in the left breast is a constant symptom. The skin may become so sensitive that the slightest touch, or the contact of the dress may be unbearable. Severe pain, diffused over the surface of the abdomen is a very common symptom. More or less painful affections of the back, especially tenderness of the spine are frequently present, and also pains in and about joints, which are not unfrequently taken for gout or rheumatism. Sir Benjamin Brodie, who was the first to direct attention to the frequency of these affections, asserted that four-fifths, at least, of the joint diseases met with in women are purely neurasthenic. The hip and knee joints are most frequently affected, but the ankles, wrists, and even finger joints may be attacked. The senses of smell and taste are frequently increased in acuteness, while at other times there is a perversion of these senses. The sense of hearing is sometimes extremely acute, while at other times there may be deafness. So with the sense of sight, increased acuteness, or absolute though temporary blindness. Anæsthesia, or a diminution, or even complete loss of sensibility is common; and, not only so, the senses of taste or smell may be lost, and spasms may occur in every muscle, or group of muscles in the head, trunk or extremities. Spasmodic closure of the glottis may produce alarming difficulty of breathing, and so may spasm of the muscles of the throat make swallowing difficult, or even impossible; and so with the tongue, articulation may be impaired. The stomach also, may undergo spasmodic contractions, giving rise to persistent and distressing vomiting, and there may be present also, spasm and rolling of the intestines, and spasmodic retention of urine, and there may be partial or incomplete loss of muscular power in any part of the body. Loss of voice from paralysis of the vocal cords is a very common symptom. Neurasthenic patients are also very liable to suffer from paroxysms of palpitation ; and they complain also of rushing of blood to the head. There are also disorders of the circulation. You know that the arteries have elastic muscular coats ; and it would seem that in some cases their contraction is so great as almost to stop the flow of blood. Dr. Charcot, the great nerve doctor of Paris, believes that this may furnish an explanation of certain reputed miraculous occurrences, as, for instance, the statement made on good authority, that in the epidemic of *Saint Medoit*, the sword blows which were given to the "*convulsionaires*" *did not cause bleeding*. Not less remarkable are certain neurasthenic hemorrhages.

The usual monthly flow ceases : but the patient may bleed (*healthily* bleed) from the throat or lungs ; or even "*sweat blood from the skin.*" Bleeding has been observed, even from the nipple, as well as from every other part of the body.

Neurasthenic patients suffer from various disorders of secretion, and excretion. There may be an increased flow of saliva ; or an abnormal dryness of the mouth : and the secretion of urine may undergo frequent alteration. Its large increase is common : but sometimes there may be absolute decrease.

So much for a general description of Neurasthenia : and its symptoms. Let us finally look for a moment at the Mental, Emotional, or whatever you like to call it, aspect of the matter.

There is generally excessive emotional excitability, unchecked by voluntary efforts : and in addition to this, there is a *craving for sympathy*: but mark the distinction between the invalids I now speak of, and those of us who being fairly healthy, yet crave that sympathy without which life would be desolate. *The Neurasthenic crave sympathy but refuse it to others!* and it is this *morbid* craving for sympathy which prompts them either to exggerate a real ailment : or to feign illness when they are free from it—even to inflict bodily injury on themselves for the purpose of arousing compassion and attention.

So much for a general sketch of the "*Neurasthenic*" whether man or woman. And the greater part of what I have said as descriptive of the varying symptoms of the disease we are now considering is taken from the great work of Dr. James Ross, of Manchester, who has, without doubt written *by far* the best treatise upon "Diseases of the Nervous System" that has ever appeared in the English language.*

And now, having, as I think we may say fairly considered the more customary symptoms of what you call "*Hysteria*" but what I call "*Neurasthenia*," let us devote our attention to a far more important aspect of the question :—

ITS TREATMENT !—

And let us bear thoroughly in mind that "*Neurasthenia*" is not an imaginary disease. Its symptoms are not "*simulated*" by the patient ! It is a *real* disease, depending upon a perversion of function, or nutrition, or both.

As regards treatment: a proper amount of sleep is most essential.

It is a well known fact that the regular alternation of day and night coincides with the nervous sensibilities of all animals endowed with a highly organized nervous system, for the almost universal habit of animals falling asleep as soon as darkness comes on, and awaking with the return of day, is a dispensation of "kind nature," and if we endeavour to alter that dispensation, we make a grevious mistake. It may be said in general terms, that bodily strength is greatest in the morning, and sensibility least, and *vice versa* in the latter part of the twenty-four hours. In the evening the power of moving and of muscular effort is *least*, but the *acuteness of feeling is more intense.* Associated with this feeling is necessarily an increase of nervous excitability; for impressions appreciated more keenly by the senses, more readily awaken emotions, and you see that the nervous system becomes more sensitive, more highly strung, more ready for the "*Harp of Life*," about which Lord Tennyson so eloquently writes; and this heightened sympathy is more often a source of pleasure than of pain.

Social intercourse, and the usual pleasures of social life are more highly enjoyed.

The first cause of "*Neurasthenia*" is a condition which

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*"A TREATISE ON THE DISEASES OF THE NERVOUS SYSTEM," by James Ross, M.D. F.R.C.P., Physician to the Manchester Royal Infiramary. *Two Vols.*, 8vo. London, J. & A. Churchill, New Burlington Street.

often causes great sleeplessness *at hours when sleep is the only normal condition.*

Wakefulness, beyond the accustomed hour for going to bed, indicates an irritable condition of the brain, and *where there is irritability there is always weakness and not strength!*

Prescribe firstly, exercise in the open air, *pushed to the point of inducing a slight feeling of being tired,* but *exercise short of anything like exhausting fatigue.* This will be a powerful means of securing sleep.

A prolonged warm bath at night, especially when its sedative influence is followed by the tonic of a cold bath in the morning, is also most advisable. The extreme instability of the nervous system will sometimes bring on "*night walking*" or "*Somnambulism.*" This consists in the ability to perform complicated actions that are related to the circumstances of a dream, and in no relation to the real surroundings of the body of the sleeper; and the mind would seem to be held in a sort of rigid attitude, for the somnambulist will take long walks, perform difficult feats of climbing, attempt to kill persons by whom he imagines himself injured, and even attempt to commit suicide.

Never awaken a Somnambulist. Lead him back gently and quietly to bed.

One of the worst cases of Epilepsy I have had under my care, was the case of a girl of nineteen, who was a somnambulist. Her relations (I cannot call them her "friends,") threw a bucket of water over her. She had some thirty epileptic fits during the next day, and she is now in a lunatic asylum.

In aggravated cases of Neurasthenia, the patient (man or woman) should be removed from home, and the presence of relations, and placed, for a period of several weeks, under the care of complete strangers.

In such cases the *principle* is to secure the advantages of absolute rest, as by the patient lying in bed, *combined with the advantage of exercise.* The patient cannot both lie in bed and walk about at the same time; but by this method, while getting the advantage of rest, the advantage of exercise is (if I may so say) artificially imported by the Masseuse or Masseur.

Also proper food is given, and a proper amount also.

You must remember that the patient has generally taken insufficient food: and as Weir Mitchell says: "I am daily amazed to see how kindly nervous women take to this absolute rest, and how little they complain of its monotony. In fact, the use of Massage and the battery, with the frequent comings of the nurse with food, and the doctor's visits, seem so to fill up the day as to make the treatment less tiresome than might be supposed: and besides, the sense of comfort apt to come in about a week: the feeling of ease and the ready capacity to digest food—the growing hope of final cure, fed as it is by present relief, conspire to make most patients contented and tractable. *The intelligent and watchful Physician must, of course, know how far to enforce, and when to relax these rules.* Above all, let him be careful that the Masseuse and the Nurse do not talk of the patient's ills. Let the patient only speak of them to himself or herself. *This mode of treatment is valueless without the cordial and submissive assistance of the patient.*

The diet scale of these patients usually commences by large doses of milk, about every two hours—for from four to six days—then raw meat soup for a week or more; then, in addition, a full dinner ending by coffee, also a chop for breakfast, soup at eleven o'clock, and if dinner is at one, then soup again at four, and bread and butter and fruit at seven, and soup again at nine. This is the copy of a typical Diet Scale of a case of *extreme* Nervous Exhaustion. The patient would be also galvanized once, and massaged once or twice daily as prescribed by the Physician.

And now, quoting from Mitchell, and Playfair, who has done so much to introduce Mitchell's treatment, I will give you instances of what this treatment has done.

A lady was so exhausted that she could not walk across the room. She had come from one of the Colonies, and had been carried on to the steamer and off it in a litter. Her state of health as described had existed for three years and was getting worse. In two months she was a strong, healthy woman, up to any exertion, and she returned home well, and still continues well.

A young lady of 17 broke down from overwork at school. There then came complete loss of appetite, failing sight, excessive emaciation and inability to take any active part in the work of life. She rapidly recovered, and is now as well as any girl of her age need be.

A lady, 52 years of age, had been confined to her bed for fifteen years. After six weeks' treatment she was completely cured, and went home quite well.

A lady had been in bed for three years. She was brought up from the country on a couch strung from the roof of a saloon railway carriage, so as to avoid jolt or jar. In six weeks she was well.

Another lady, who for twenty years had spent her life in bed or on the sofa, and who was unable to stand, was well in eight weeks.

Another similar case, confined to bed for sixteen years, was also cured in eight weeks. But probably the most remarkable instance of successful treatment was that of a gentleman, whose case (by the courtesy of Dr. Playfair), I append in somewhat fuller detail:—*

The patient's illness had commenced five or six years previously, when much exposed ranching in America. He was now 33 years of age, a very tall man, and once very strong and muscular. This is his own account of his illness, written in September, 1883. "About five or six years ago, I began to suffer greatly from indigestion, which reduced my strength very much, and brought on a very severe pain in the right side of the stomach from back to front, which all the doctors seem to agree to be neuralgia. I have the pain daily, almost hourly, and at times it amounts to intolerable agony. I suddenly collapsed about a year ago, and was in bed most of last year. I have now got into a regular weak state; get very bad nights' rest; can take next to no food, and very often bring up what I take. I am simply devoid of muscle, and am nothing but skin and bone. I weighed, the other day, 8 stone 5 lbs. (he was considerably over six feet in height): I consider my proper weight to be 12 stone 10 lbs."

It will suffice to say that after a fortnight's treatment, this patient was eating an amount of food that was astounding, and ere long he sailed for a sea voyage, with his proper weight regained. On December 13th, 1885, he wrote: "Since my return, I have been in perfect health, which continues up to the present date. In fact, I believe I am in better health than I have ever been in my life." The appended woodcuts will

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*See *British Medical Journal*, November 6th, 1886, page 855.

illustrate the nature of the case, and the results of systematic treatment, better than any amount of verbal description. They are taken from photographs supplied by the patient.

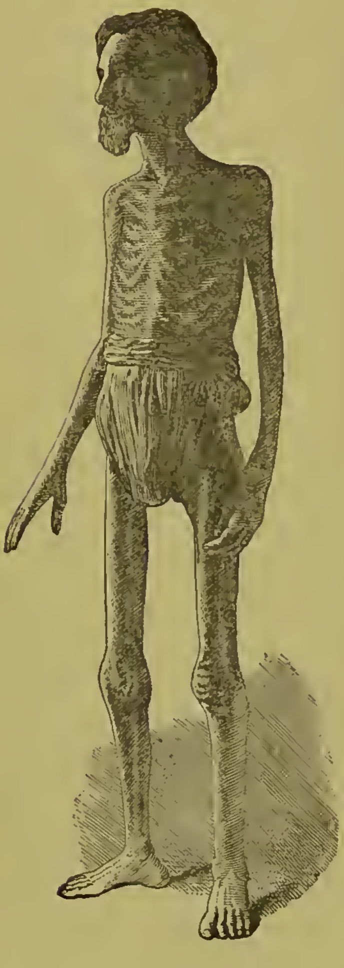

Fig 1.—Patient at commencement of treatment.

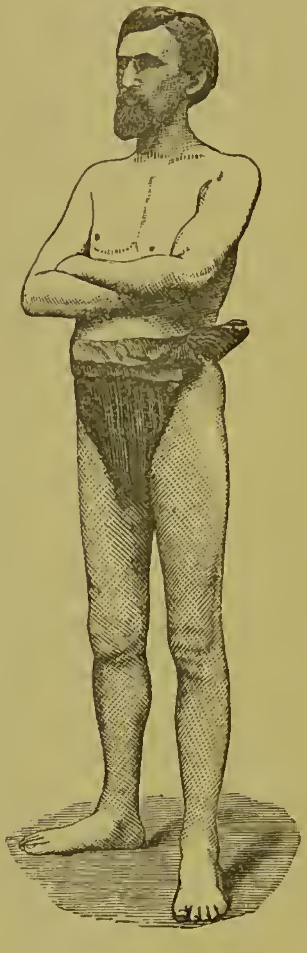

Fig. 2.—Patient after six weeks' treatment.

Dr. Playfair has very wisely said: "The condition of many of these patients has been cultivated and fostered by injudicious medication, as surely *as mushrooms are forced in a hotbed.*" Such a patient is not a person with a nervous system prone to break down, but one whose nervous system, from some cause or other,—shock, overwork, mental strain, and so on,—actually *has* broken down, and who has thus become a complete invalid, and incapable of fulfilling the ordinary duties of life.

These cases are quite capable of cure in certain ways, which are certainly not those generally adopted. They are not sufficiently recognized, for if so, how does it happen that almost every one of them are able to point to a whole array of doctors, under whose care they have been without any material benefit? the cases recovering, and since remaining in perfect health, as soon as the true condition of matters was fully recognized and acted upon. The truth is, that it is only recently that these cases are being estimated at their proper value, and it is only now beginning to be understood that they need not be given up in despair, and consigned to life-long illness, *for there is no class of disease more certainly amenable to proper systematic efforts at cure.*"

And now, having given you instances of the good results of our treatment, when suitably carried out and in suitable cases, I would earnestly impress upon you how important it is that patients selected, (necessitating, as that selection does, their removal to London, with much inconvenience, and considerable expense), *should be selected with extreme care*, otherwise we get not credit, but discredit.* For as always happens with a widely used remedy, unsuitable cases are now and again sent to town, with disappointing results.

A very clever novel, "*The Massage Case*,"† has recently been published, evidently written by a sympathetic medical man, or by a lady Masseuse, thoroughly acquainted with Massage. I do not doubt that it is founded upon fact; and by the courteous permission of the author I am allowed to refer to it.

A bright, sympathetic girl, accustomed to the freedom of a seaside village, accustomed to be always in the open air, is suddenly transplanted to a dingy house in London, and to a family with whom she has no sympathy whatever. With such uncongenial surroundings her health gives way—and she wisely writes—'Unhappily the most useful of all sciences is still a sealed book to the majority. In my utter ignorance I regarded all nervous illness as sheer nonsense. If I had been taught something of the human frame in general, and of my nervous system in particular—I should have refrained from taxing my strength habitually to the utmost, so that I had nothing in reserve when an unforeseen strain was put upon me.'

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*Weir Mitchell writes, and I can thoroughly endorse his dictum:—"I have often made the effort to treat these cases at home; but I have rarely done so without promising myself that I would not again complicate my treatment by any such embarassment."

†"The Massage Case," by Cyril Bennett. T. Fisher Unwin, 26, Paternoster Square, E.C.

Without telling her the fate in store for her, they sent her to a "Nursing Home" in a noisy street. She overhears a conversation between her coarse landlady and a still coarser nurse as to her being a 'Massage Case.' They did not allow her a newspaper, nor to write a letter, nor to receive one.* And there is one matter with which I most heartily sympathize with her. She writes: '*There were not even any matches in the room!*'"

I am not ashamed to say, that I am utterly unable to sleep unless I have a box of matches at my bed side—and more than once I have got out of bed to obtain them.

She received not one word of welcome—not the merest pretence of kindly feeling—scarcely even bare civility, while as she properly remarks:—'the fact of being in a suffering state should entitle the patient to gentleness, and courtesy, not to harshness!' and she quotes from Weir Mitchell:—'The patient should have an abundance of good food—the nurse should be quiet and refined:† the Massage should be painless: and the Doctor should win the confidence of the patient.' In her case none of these conditions were complied with.‡ The poor girl ends by getting a "brain attack" which she thus describes:—

"A roar as of mighty waters: a heaving: struggling and giving away: a terrific crash—darkness—stillness—and a very long blank."

You will be glad, however, to hear that she eventually recovers, and marries a Doctor:—*but not the Massage Doctor*! Before her final breakdown, she wrote the following clever parody upon '*The Walrus and the Carpenter.*'"

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*A patient recently under my care had undergone this treatment. She was allowed to write letters, *but not to receive their replies!* Could there be a greater absurdity? and as the author of the "Massage Case," very pertinently writes: "*Could not an action for false imprisonment be brought against all those concerned?*"

†It must always be borne in mind that most of these patients are over sensitive, refined and educated women, for whom the clumsiness and want of neatness, or bad manners of a nurse may be a sore and steadily increasing trial!

‡She also adds:—"Massage is very seldom done right. The Doctor does not know how it ought to be done; and he depends upon the nurse; and in *nine cases out of ten* the nurse has been taught badly: and it is the '*blind leading the blind.*'"

* THE DOCTOR AND THE NURSE.

The moon was shining gloomily
Shining through fog and smoke,
The weary patient lay in bed
Like other suffering folk;
And this was rather odd because
She yet could laugh and joke.

The Doctor and the special nurse
Were watching close at hand;
They wept like anything to see
Our patient blithe and bland;
"If she would *only* go away,"
They said, "it *would* be grand."

"Suppose we were to Massage her
For half a night or so,
I do believe," the Doctor said,
"That we could *make* her go"
"I doubt it much," the nurse replied
And dropped a tear of woe.

"Come Patient! rise, and sham no more,"
The Doctor sternly cried;
"If you insist on stopping here,
You'll be Electrified,
And rubbed, and pinched, and teased until,
You wish that you had died."

The weary patient looked at him,
But never a word she said;
Then silently she closed her eyes
And shook her aching head;
Meaning to say, she had no strength
To leave her cosy bed.

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*"THE WALRUS AND THE CARPENTER."

(By kind permission of Messrs. MACMILLAN.

The sun was shining on the sea,
Shining with all his might;
He did his very best to make
The billows smooth and bright—
And this was odd, because it was
The middle of the night.

The moon was shining sulkily,
Because she thought the sun
Had got no business to be there
After the day was done—
"It's very rude of him," she said,
"To come and spoil the fun."

Then two more nurses hurried in,
All eager for the sport;
Their hearts were hard and cold, they loved
To torture, tease and thwart;
Nor was this odd, since they for years
This treatment had been taught.

The sea was wet as wet could be,
The sands were dry as dry.
You could not see a cloud, because
No cloud was in the sky:
No birds were flying overhead—
There were no birds to fly.

The Walrus and the Carpenter
Were walking close at hand;
They wept like anything to see
Such quantities of sand;
"If this were only cleared away,"
They said, "it would be grand!"

"If seven maids, with seven mops,
Swept it for half a year,
Do you suppose," the Walrus said,
"That they could get it clear?"
"I doubt it," said the Carpenter,
And shed a bitter tear.

"O Oysters, come and walk with us!"
The Walrus did beseech.
"A pleasant walk, a pleasant talk,
Along the briny beach:
We cannot do with more than four,
To give a hand to each."

The eldest Oyster looked at him,
But never a word he said:
The eldest Oyster winked his eye,
And shook his heavy head—
Meaning to say he did not choose
To leave the Oyster-bed.

But four young Oysters hurried up,
All eager for the treat: [*washed,*
Their coats were brushed, their faces
Their shoes were clean and neat—
And this was odd, because, you know,
They hadn't any feet.

Four other Oysters followed them,
And yet another four;
And thick and fast they came at last,
And more, and more, and more—
All hopping through the frothy waves,
And scrambling to the shore.

The Walrus and the Carpenter
Walked on a mile or so,
And then they rested on a rock
Conveniently low:
And all the little Oysters stood
And waited in a row,

"The time has come," the Doctor said,
"To talk of many things;
Of crutches and gymnastic boards,
Of bruises, scars and slings;
And why the pinching hurts so much,
And why the battery stings."

"The time has come," the Walrus said,
"To talk of many things:
Of shoes, and ships, and sealing wax,
Of cabbages, and kings,
And why the sea is boiling hot,
And whether pigs have wings."

"But wait a bit," the Oysters cried,
"Before we have our chat;
For some of us are out of breath,
And all of us are fat!"
"No hurry!" said the Carpenter,
They thanked him much for that.

A loaf of bread," the Walrus said,
"Is what we chiefly need:
Pepper and vinegar besides
Are very good indeed—
Now if you're ready, Oysters dear,
We can begin to feed."

"But not on us!" the Oysters cried,
Turning a little blue;
"After such kindness that would be
A dismal thing to do!"
"The night is fine," the Walrus said,
Do you admire the view?"

"It was so kind of you to come,
And you are very nice!"
The Carpenter said nothing but
"Cut us another slice;
I wish you were not quite so deaf—
"I've had to ask you twice!

"It seems a shame," the Walrus said,
"To play them such a trick,
After we've brought them out so far,
And made them trot so quick!"
The Carpenter said nothing but
"The butter's spread too thick."

"I weep for you," the Walrus said:
"I deeply sympathise,"
With sobs and tears he sorted out
Those of the largest size,
Holding his pocket-handkerchief
Before his streaming eyes.

"O Oysters," said the Carpenter,
"You've had a pleasant run!"
Shall we be trotting home again?"
But answer came there none—
And this was scarcely odd, because
They'd eaten every one.

"But wait a bit," the patient said,
"Before we have our chat,
Let's find out what these Nurses want,
So big, and strong and fat."
"No hurry," was the cool reply;
She thanked him much for that.

A Faradaic battery
Was brought with lightning speed;
At working this, the smallest Nurse
Was very good indeed.
"Now Patient," said the other two,
"*We* will begin to knead."

"But Doctor dear," the patient cried,
Turning a little blue,
"Such cruel things you surely *will* not,
Can not let them do!"
"The evening's dark," the Doctor said,
"Do you admire the view?"

"I like the Walrus best," said Alice: "because he was a *little* sorry for the poor oysters."

"He ate more than the Carpenter, though," said Tweedledee. "You see he held his handkerchief in front so that the Carpenter couldn't count how many he took: *Contrariwise*."

"That was mean!" Alice said, indignantly. "Then I like the Carpenter best—if he did'nt eat so many as the Walrus."

"But he ate as many as he could get," said Tweedledum.

This was a puzzler. After a pause Alice said, "Well!" they were *both* very unpleasant characters."

"I weep for you," he sadly sighed,
"But you are very thin,"
With tears and sobs, he signed to
The Nurses to begin:
And yet for all the pain they gave,
He did'nt care a pin.

Before the Doctor spoke again
The clocks had all struck one;
"Now, patient, rise, and get you gone!"
But answer came there none;
And this was scarcely odd, because
They'd killed the suffering one.

I hope none of you will be so unfortunate, so unfeeling, so cruel, so clumsy, or so idiotic, as were the Doctor and the Nurses in this case; but with the best intentions,—in Massage, as in other things,—there are prevalent fallacies as to invariable results; as to the cases most likely to derive benefit; and as to the length to which each *seance* should extend. Some writers advocate an application so long even as two hours, twice or three times a day. Others say from four to ten minutes, three or four times a day, is all that is required. Probably the medium time between these extremes will be the best—half to three quarters of an hour once or twice daily, but each case must be carefully considered and treated according to the individual requirements of the patient. No one in his senses would prescribe the same method and duration of Massage to a very stout old lady of seventy, as he would to a nervous, thin girl of seventeen.

I will now mention the signally beneficial results of Massage in certain uterine misplacements.

As you are aware, the uterus is an organ freely movable, and therefore under certain circumstances, apt to get misplaced, with much discomfort and suffering to the patient. When such a condition exists, (and of course this must be determined by a medical man), Massage is often of the very greatest use, and, *not seldom, will put matters right without any other treatment being required.* In addition to misplacements, the uterus is unfortunately given to having tumours in connection with it, and these tumours render the case a much more anxious one to the physician, than any mere displacement of that organ could do. In such circumstances we should call Electricity to our aid.

Ten years ago I wrote as follows :—"The removal and dispersion of tumours by the chemical action of electricity is making daily progress; and it will probably, before long, become a recognized part of *ordinary* treatment. Absorption will, by its use, be usually stimulated at once, and often the tumour will be greatly reduced in from one to three or four months." I also advocated it in cancers, and I quoted several cases of success from its employment, both in cancer and in tumours.

I was premature in predicting its rapid success. That success has waited for ten years, but it is *now* assured.

The recent publications by Dr. Apostoli, of Paris, of the results of his employment of Electricity in the treatment of Fibroid Tumours, have created a great sensation throughout the Medical Profession; and I was consulted, this week, by a lady, who from being a bed-ridden and hopeless sufferer, has, in twelve months, (under Dr. Apostoli's care), absolutely and thoroughly regained her health. By a most ingenious method of Electrization, Dr. Apostoli has been enabled to employ, without pain to the patient, much more powerful applications of Electricity than were possible before he originated his improved method; and although he did not sow the seed, yet it must be said of him, as was said of St. Paul, that "although Paul planted, Apollis watered," and to Dr. Apostoli must be attributed the successful and practical realisation of the hopes of many physicians, who before him had earnestly, and with much toil, endeavoured in vain to give that answer, which he has himself so successfully given, to the all important question of the best means of relieving multitudes of suffering women! When we see a woman, who in months or years of suffering, has passed through the stages of depression, debility and exhaustion, till at last she lies down in bed, helpless and in despair, rise up after a few applications, with her pains soothed, her bleeding stayed, her countenance brightening, her appetite returning, and the dawn of a new life opening upon her, one is apt to think that medical science has justified itself.

So I say, and I am certain you will agree with me; though I may venture to feel that sense of disappointment always felt by those not first in the race.

In conclusion, I would for a moment ask your attention to some ery kindly remarks made about our School, by a Lady

Physician, Mrs. Anna Kingsford, who possesses one of the highest medical degrees obtainable anywhere, the M.D., of Paris. "Life" said Dr. Anna Kingsford, "is often very hard for educated women. Hard, not only because marriage is impossible for all, and because provision is not always made by parents for the support of their single daughters, but because also, women as well as men, have energies that require exercise, and laudable cravings after occupation which ought not to be repressed. It is therefore very pleasant to think medical science has opened a new door to our sex, and that ladies who do not care to face the severe toils necessary to become physicians and surgeons, or the prolonged discipline to which hospital nurses are subjected, may now qualify as *Masseuses* and *Electricians* at the new special school, founded for the purpose, at the West-End Hospital where there is every guarantee that students will receive the best possible instruction.

"As a medical practitioner myself, I am particularly glad to welcome this new departure. Convinced as I am, that in the science of the future, hygiene and its practical applications are destined to take a foremost place, I am delighted to see public encouragement thus given to the spread of a method of treatment so eminently natural and 'common sense.' Drugs have too long held undisputed sway in the sick room, and far too little attention has been accorded to the potent influence upon health which may be wielded by the expert hand of the *Masseuse.* A fresh impulse has now been given to the system, and the demand for trained operators is growing steadily and swiftly. It will be noticed that to the old method of massage science has now added the accessory of electricity; and the teacher's own proficiency in the application of every branch of therapeutic electricity will be ample warrant that his pupils are thoroughly well taught. His care in demonstration, his clearness of instruction, and the practical development he has given to Galvanism, Franklinism, and Faradism are widely recognized; and I am happy in this connection to be able to acknowledge my own debt of gratitude to him for the kindness with which he recently met my request for a little personal assistance in the study of electro-therapeutics. I found in him not only an able teacher, but a sympathetic champion of the claims of women to a fair field of labour beside men. He fully admitted their right to graduate as medical practitioners if they so desired, and deplored the ungenerous opposition with which their efforts in this direction had been met by the majority of his *confreres.*

"Holding such views it is quite natural that he should have taken the initiative in providing our sex with yet another honourable vocation, and we shall all regard this kindly labour of his, as among the best benefits he has been the means of conferring on the world. A fruitful channel of industry has been thus thrown open to those of us who love usefulness, desire to support ourselves honestly, and who are yet unwilling to lose caste by seeking employment in domestic or trade service. No fear need be entertained that women qualified in the new school will lack employment. As has been observed in a recently issued work: 'The treatment of diseases of the nervous system has, within the past few years, grown up into a recognized speciality. Recent investigations, have cast a flood of light upon its study, and it possesses, as a separate field of practice, special hospitals, and a voluminous and rapidly extending literature.' I may venture to add to this, on my own account, and as the result of my own medical observation, that the province of Massage and Electrical treatment is by no means confined to nervous diseases. One of the commonest complaints of the day, indigestion, associated with constipation, yields more readily to such treatment than to any 'exhibition' of drugs. Obstinate cases, which for years have baffled all the resources of the Pharmacopœia, have, under my own eye, been cured, or at least greatly ameliorated, by a few weeks of skilled Massage treatment, What a prospect of universal demand and continual occupation is thus discovered to the vision of the certificated student, issuing from the doors of the Hospital in Welbeck Street. Nervous and Dyspeptic disorders constitute the vast majority of the ills from which the wealthy classes suffer, and paying patients in plenty may be found as soon as the new method is popularised. Meanwhile all the journals, lay and medical, are doing their best to make it known, and the future of the rising system is already assured." So says Dr. Anna Kingsford.

Now one word for our School.

Most of you are aware that it was founded at the request of many medical men and to supply a much felt want. Our Medical and Surgical Staff strongly supported the proposal, and our Committee of Management gave their sanction to it, upon the distinct understanding that our School should be entirely self-supporting, and that none of the funds of the Hospital should be apportioned to it; and in their Annual Report, just issued, our Medical and Surgical Staff after describing our system of treatment add :—" As all these methods take time, it would be impossible to conduct them without the aid of many ladies who kindly give their gratuitous services to the Hospital, and who attend daily and carry out the directions of the Medical Staff." Our School, as I have already said, *has* prospered, *is* prospering, and will continue to prosper :—and in bidding farewell to those of you who have finished your course of instruction and received your Certificates, I am reminded of an address delivered at the largest hospital in London, when I was a student many years ago : and I will say to you what was then said to me by the present President of the College of Surgeons. " Our Hospital " said Mr. Savory, speaking of St. Bartholomew's, " is not limited to these walls. Its students, wherever they go, are part of it. Their success is its success : their failure its failure : their honour its honour : their disgrace its disgrace. Strive then to be worthy of your Hospital."

Need I add, that I am sure I express the wishes of us all, when I say how earnestly we hope that every possible happiness, prosperity and success may attend you in your new vocation : whether you make it your life-long work : or whether you may follow it only until, peradventure fate may call you to other duties and pleasures.

"POSTSCRIPTUM."

A SUPPLEMENTARY LECTURE.

You will recollect that in my "Electrical Demonstrations*" I discussed with you the Bones, the Muscles, and the Nervous System, the two latter subjects especially requiring our study as Medical Electricians.

To-day, as more particularly appertaining to Massage, I shall demonstrate the Viscera in position, including the Organs of the Circulation, the Lymphatics or Absorbents, and the Digestive Organs.

I have had one of our life-sized figures† photographed and engraved, (*see frontispiece*), and I think it will help you in recalling to mind the subject of this Lecture.

THE CIRCULATION OF THE BLOOD, AND THE LYMPHATICS AND ABSORBENTS.

In the lowest animals the nutritive fluid merely percolates through the intervals between their tissues. They have no separate tubes or vessels to contain that fluid, and may thus be said to have no proper organs of circulation. In the larger number of animals there exist tubes for the conveyance of the blood; and as a first step towards the formation of a heart some of the larger vessels contract and propel the blood into the smaller ones. This is the case in star fishes, worms and insects. In many invertebrate animals—lobsters, crabs and spiders—there is a heart, or muscular organ, situated in the centre of the circulating system and propelling the blood. In

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*"ELECTRICAL AND ANATOMICAL DEMONSTRATIONS." *With 45 Illustrations.* H. & A. Churchill.

†The Illustrations employed were the admirable life-size figures (by Professor Marshall) of the School of Science and Art, South Kensington, and the very beautiful life-size plates from dissections by Ellis & Ford.

all the vertebrate animals, from fishes to man, the heart becomes relatively larger and more perfect. By the contractions of its muscular walls it forces the blood along a set of vessels leading from it, and branching out into all parts of the body. From the terminal branches of these vessels the blood passes through a fine vascular network, composed of a multitude of microscopic blood vessels, situated in the various tissues and organs. From these, again, it enters a third set of vessels, which commencing by fine branches and joining together in their course into larger and larger ones, convey the blood back into the heart again. This passage of the blood from the heart, through the body and back to the heart again, is called the "*Circulation of the blood*." The vessels leading from the heart are called "*Arteries*;" those forming the microscopic network "*Capillaries*;" and those returning the blood to the heart "*Veins*." Circumscribed by the walls of the heart, and by the coats of these three sets of vessels, the blood does not escape from them as blood, excepting in the event of injury or disease.

In fishes, which breathe by gills, the heart consists of two hollow parts or cavities with muscular walls. One called the "*auricle*" receives the blood returned by the veins, and by contracting propels it into another hollow part called the "*ventricle*," which in its turn, contracting, forces the blood through the gills along a complete system of vessels which end in a large single vessel, the "*aorta*," the branches of which penetrate the whole body: and by the veins the blood is returned to the auricle again. This is called a single circulation, because the blood starting from the heart passes through the respiratory organs, and then on through the rest of the body before it returns to the heart again: or in other words, the respiratory circulation is part of the general circle in which the blood flows from the heart round to the heart again. But in animals which breathe the air by means of lungs, the arrangement is different, for in them the respiratory circulation ceases to be merely a part of the general one. One portion of blood is propelled from the heart to the lungs, and then comes back to the heart again, while another portion is distributed directly to the body, and thence comes back to the heart also. This is called a "*double*" circulation, and its most complete form necessitates the existence of one auricle and one ventricle for each circulation—a double heart, in fact—and in warm-blooded animals, mammalia and man, the heart is so formed; each ventricle giving off its proper artery, the right, the "*Pulmonary Artery;*" the left, the "*Aorta.*"

The course of the circulation is as follows:—

The blood returning *deteriorated* from all parts of the body is poured into the right *auricle* by the *superior vena cava, the inferior vena cava*, and a small vein the *coronary* vein which returns the blood from the walls of the heart itself. From the right auricle it is propelled into the *right ventricle*, and by it driven on through the *pulmonary artery* and its right and left branches, into the two lungs. In the capillaries of the lungs the deteriorated blood exchanges carbonic acid for the oxygen of the air, becomes of a bright-red colour, and regains its vivifying qualities. Then returning by the *pulmonary veins* into the left *auricle*, it is propelled into the left ventricle and is then forced by that ventricle though the *aorta* and its various branches into all parts of the body. In passing through the capillaries of the various organs and tissues, the blood parts with nutritive material, expends its vivifying properties, and now containing more carbonic acid and less oxygen, and receiving into its current, by absorption, certain used-up and waste materials from the tissues, becomes changed from a bright to a dark-red colour, and thus deteriorated returns to the right auricle again—thence to pursue a similar course to that I have just traced.

The *Heart* is about the size of the closed fist—a woman's heart of *her* closed fist, a man's of *his*; so that women cannot be said, "anatomically," to be larger hearted than men! As I said before, it is a double heart; really two separate hearts joined together for convenience of space and economy of material, *for nothing is ever wasted in Nature!* It is completely divided internally into a right and a left half: that is, a right and a left heart: and by this arrangement the parting wall between the two serves as one side of *each! This is an economy of material.* The auricle and ventricle of each half communicate freely with one another, but not with those of the opposite side. The work of the auricles being merely to receive the blood and propel it into the ventricles, their muscular walls are thin: but the ventricles which have to force the blood out from the heart, through the lungs or the body, have muscular walls of considerable thickness. At every beat of the heart the two auricles contract: and then quickly afterwards the two ventricles, the two auricles acting together, and the two ventricles together, the contraction of both kinds of cavities being called their "*systole*," while their dilatation is called their "*diastole.*"

The number of times the heart beats in a minute may be counted by the pulse, which is on an average from 70 to 75 per minute in an adult: in the infant it is much quicker—from 100 to 120. In old age it is less, averaging from 56 to 65.

At every beat a certain portion of dark blood goes from the right side of the heart from the lungs—and having become red, returns to the left side—whilst at the same time a corresponding portion of bright red blood goes from the left side through the body, and having become dark, returns to the right side. The blood which leaves one side of the heart returns, therefore to the opposite side of that organ: or in other words, the two circulations—the lesser and the greater—end one in the other at the heart: and thus all the blood in the body passes in continuous rotation through both circulations.

Since both arteries and veins are connected with the heart, why is it that the blood is moved along these two sets of vessels in opposite directions?

This is accomplished by means of internal flaps or valves: some in the ventricles of the heart: others at the entrance of the pulmonary artery and aorta.

At the mouth of the inferior vena cava there is a valve called the *eustachian* valve, which, during the contraction of the auricle, prevents the blood passing down. At the mouth of the superior vena cava there is no valve, the weight of the column of blood offering sufficient resistence.

When fully distended, the ventricle contracts powerfully upon its contents, and a triangular fold of membrane the "*tricuspid valve*" comes into play, and extends across the right auriculo-ventricular opening and prevents the blood making its way back into the auricle. Hence taking the direction of least resistance, the stream of blood is driven into the pulmonary artery, and so into the lungs. The right ventricle now ceases to contract; but the blood is prevented from returning by another valve—the "*semilunar*" valve at the orifice of the pulmonary artery. In the meantime the ventricle, having become relaxed and dilated, is refilled from the again-contracting auricle which in its turn has regained a supply of blood from the two venæ cavæ. The distended ventricle once more contracts, and the same process is repeated at every beat of the heart.

While the right side of the heart is thus receiving successive portions of dark blood and is transmitting them to the lungs, the left side of the heart is receiving similar portions from the lungs, and is transmitting them to the body.

Now the valves on the left side of the heart correspond in arrangement and action with those of the right side.

At the left auriculo-ventricular opening there is a valve—the "*bicuspid*": and at the commencement of the aorta are three pocket-shaped or "*semilunar valves.*" You will observe how much thicker and stronger are the muscular walls of the left ventricle than those of the right: for the left ventricle has to force the blood through the *entire body*, while the right ventricle has to force it only through the lungs.

The *arteries* are the vessels through which the blood is driven by the heart into all parts of the body. They commence by two great trunks, one proceeding from each ventricle. The trunk proceeding from the right ventricle is the "*pulmonary artery*"; the one from the left ventricle is the "*aorta*," by which the blood is conveyed to all parts of the body. *The various arteries correspond with the various nerves.* From the main trunks of the arterial system, very numerous branches of different sizes are continually given off, which again divide and subdivide many times in succession as they run through the various tissues and organs of the body. Continually subdividing, they become so small that they require a magnifying glass to recognize them: and they pass gradually into the "*capillaries.*" The capillaries may be said to be intermediate between the ending of the arteries and the beginning of the veins, for the veins commencing by little twigs from the capillary network, join together to form larger and larger branches terminating at length in the large veins which empty themselves into the auricles: but the blood returned from the stomach and the intestines, before returning to the heart performs another circulation through the substance of the liver. This is called the "*portal circulation.*" The coats of the veins are much thinner than those of the arteries, and, as you know, they contain valves in their interiors: and the discovery of these valves furnished the most important hint towards the demonstration of the true course of the blood by our illustrious countryman—Harvey.

And now having briefly considered the mechanism of the circulation: *Why* does the heart, sometimes for upwards of a century, continue its unremitting work? *We cannot answer that question.* We only know that the heart is stimulated to contract by the presence of the blood, and it is a most wonderful fact that venous or dark blood only will stimulate the *right* auricle: and arterial or scarlet blood the *left* auricle: and that when (as has occurred by accident or disease) arterial blood has taken the place of venous, or venous the place of arterial, the heart has become instantly paralysed, death ensuing at once.

DIGESTION AND ABSORPTION.

The simplest form of a digestive apparatus consists of a *sac* formed in the interior of the animal, and having a single opening serving both as inlet and outlet. The stomach, with all of us, has what is called a mucous membrane, and which is really a continuation of the skin. In the simplest form of animal this lining membrane is so identical in character with its skin, that the animal can be turned inside out, the outside skin then forming the lining of the stomach, without interfering in the slightest degree with its digestion, which goes on just the same. In these dyspeptic days, it would seem a pity that the same sort of thing cannot be done with some of us!

There is another sort of animal that dispenses with any stomach at all, and when it is hungry it simply wraps itself around the food it fancies, absorbs the nutriment from it, and then disengages itself! In a higher form of animal the stomach consists of a tube; the food entering at one end, the indigestible matter escaping from the other; and by numerous gradations from this simple form, step by step, we reach the complicated apparatus found in the higher animals and in man.

Let us shortly consider digestion in these higher animals.

The food entering the mouth is more or less bruised or torn by the teeth. This is "*Mastication.*" It is also moistened by the "*Saliva.*" From the mouth it is conveyed by muscular power through the throat and gullet, into the "*Stomach.*" This is "*Swallowing* or *Deglutition.*" In the stomach it is arrested for a time and submitted to the action of the "*Gastric juice.*" This is "*Digestion.!*' The substances capable of being acted upon are dissolved, and converted into a pulpy substance called "*Chyme.*" Passing now out of the stomach into the succeeding part of the tube, the intestinal canals, or intestines, the chyme becomes mixed with the *bile*, secreted by the liver, and with the *pancreatic juice* formed by the pancreas or sweet bread; and from this mixture there results, among other products, the white milky looking emulsion named *Chyle*. This, the final stage of the process, is called "*Chylification*." The chyle is absorbed by the *lacteal vessels* of the small intestines, and conveyed by the thoracic duct into the blood. The residual mass, together with certain intestinal fluids, passes along the great intestine, and is expelled as unfit for absorption into the system.

Let us shortly consider the *Lymphatic or Absorbent Vessels*, the *Thoracic Duct*, and certain roundish bodies connected with them and called *Lymphatic Glands*. These constitute the Lymphatic or Absorbent system.

The coats of the lymphatics are so thin and the fluid which they convey is (except during digestion) so transparent and colourless, that they are invisible in ordinary dissection. The lymphatics—like arteries, veins, and nerves—are two sets, the *superficial* and the *deep*. Commencing everywhere by exceedingly delicate vessels, they gradually unite to form larger and larger ones. The *superficial lymphatics* of the lower limbs and the lower half of the trunk run towards the groins; those of the upper limbs towards the armpits; those of the head and neck descend on each side to the root of the neck; while lastly, those of the upper part of the trunk, or the thorax run, some towards the armpits; some upwards to the root of the neck. The superficial lymphatics become connected in certain situations with a great number of the rounded bodies called *lymphatic glands*. In the lower limb, for example, these are found in the *popliteal space*, on the inner side of the thigh, in the groin, &c.: in the upper limb on the inner side, beginning just above the elbow, along the arm, and especially about the armpit. The deep lymphatics having joined with the superficial, pass into the interior of the body in company with the principal blood-vessels. Those of the lower limbs ascend along the iliac arteries and veins, afterwards along the aorta, and they finally reach and end in the great trunk of the lymphatic system—the *Thoracic Duct*. The lymphatics of the intestines absorb the *chyle* and convey it into this duct. This fluid, as I have already said, is of a milky colour, and hence these lymphatics are called *lacteals* (from the Latin word "*lac*," milk). The lower end of the thoracic duct which receives this fluid is called the "*receptaculum* *chyli,*" or, receptacle of the chyle. The thoracic duct commences upon the second lumbar vertebra and therefore in the abdomen, but soon passing through the same opening in the diaphragm as the aorta, it ascends near that vessel, quite through the thorax (hence its name) resting on the vertebral column, and finally, having reached the left side of the root of the neck, behind the great veins, it bends down again and opens into the point of junction of the great veins of the neck and upper limb, called the left jugular and left sub clavian veins, so as to pour its contents into the venous current as it is pursuing its way to the right side of the heart. There is a smaller duct—the "*right lymphatic duct*"—receiving the lymphatics of the right half of the body, and terminating in the angle formed by the right jugular and right subclavian veins.

The "Glands" through which the lymphatics pass are firm rounded or oval bodies, varying from the size of a hemp seed to that of an almond, and surrounded by a strong investing membrane, and abundantly supplied with small blood-vessels. The lymphatics, like the veins, have valves, and although the causes of the onward movement of the chyle or lymph are not well understood, their coats are provided with involuntary muscular fibres: and probably by the contraction of these fibres the lymph is forced onwards, the valves allowing it only to move in one direction.

The office of the lymphatics is then to *absorb*, *convey*, *elaborate*, and empty into the venous system nutritive materials.

The office of the *lymphatic glands* is to prepare for entrance into the blood the lymph and chyle which pass through them. In certain cases in which glands are said to be sympathetically inflamed they become enlarged, and may even suppurate or form abscesses. Examples sometimes occur in the glands of the armpit from a whitlow or other sore upon the hand: and so on in all other regions. You know that the glands of the neck in unhealthy children are a favourite seat of scrofulous deposit and enlargement.

The lymphatics then *feed* the blood which is on its way, *exhausted by the work it has done*, to the right side of the heart. Thence the mixture of blood and nutritive material is sent on through the great oxygenating and purifying organs—the lungs—and becomes fit to proceed through the left side of the heart, the aorta and the arteries, to all parts of the body.

And now let us consider Digestion a little more in detail.

The cavity of the mouth extends from the lips to the commencement of the throat. The sides of the mouth are formed by the cheeks : the roof by the palate : the floor by the tongue. The cheeks and lips consist of muscles, of a layer of skin outside: and of the mucous membrane within—the two membranes being continuous with and changing into one at the borders of the lips. Of course also there are found fat, glands, vessels and nerves. Together with the cheeks, the lips —especially the lower lip—serve to retain the saliva within the mouth, an office the importance of which is proved by the distressing escape of this fluid in certain cases of paralysis. By means of these muscles the lips are enabled to size, compress, or suck various kinds of food : and also to adapt themselves accurately to the borders of drinking vessels, and so to guide liquids on to the tongue *(and this is occasionally very important in certain paralytic affections of the throat muscles where swallowing fluids is more difficult than swallowing solids, and the lips to a certain extent act as crutches—so to say—to the throat muscles!)* The lips and cheeks also assist in mastication. The roof of the mouth or *palate* is partly hard, and partly soft. The hard part is formed by the bones : the soft is a fleshy curtain continuous with the hard palate, and hanging down at the back of the mouth. From its lower edge there depends a small projection the *Uvula*. The entire palate separates the mouth from the nose, and in eating or drinking prevents the food or fluid passing into that cavity.

The *tongue* is a muscular organ attached to the lower jaw bone, and supported below by a small bone—the *hyoid bone*. In drinking it guides the liquid in the direction of the throat. It assists in mastication, rolling the food over and over. The mucous membrane of the mouth possesses glands which secrete the mucous which moistens the mouth. The glands which secrete the saliva are the *parotid gland:* the *sub-maxillary gland*, and the *sub-lingual*, of which the *parotid* is by far the largest. The saliva secreted by these six glands (three on each side), flows into the mouth chiefly when taking food: and it is calculated that more than a quart is secreted during the twenty-four hours. Even the *sight* of food will sometimes "make the mouth water," a remarkable instance of the ruling power of the nervous system! The province of the saliva is to moisten and cleanse the mouth, to moderate the feeling of thirst, and by moistening the food to render swallowing easy. *The teeth*, I need hardly say, are the essential organs of mastication, and they bruise and masticate the food, and when mixed with the saliva it is swallowed. The *pharynx* is a sort of bag, wider above than below, and opening into the *gullet or œsophagus.* Its walls are muscular and are called *constrictors* because they can constrict or press its sides together. The *gullet* descends through the neck and chest, close to the vertebral column, and therefore *behind* the bronchi, lungs, heart, and great blood-vessels, and after perforating the diaphragm, ends in the stomach. Its walls are composed chiefly of involuntary muscular fibres: and excepting when food or drink are passing down it, its sides are in contact.

The first stage of swallowing is a voluntary act. The food is propelled from the mouth to the commencement of the throat. *The second and concluding stages* are accomplished by a combination of *involuntary* movements, and chiefly by the successive contraction of the constrictor muscles upon the descending substance, until it is gradually, so to say, pushed onwards into the stomach. That "dilated pouch"—the stomach—has an upper opening from the œsophagus and a lower opening—the *pyloric opening*—leading to the intestines. The small intestine is a smooth circular tube about twenty feet in length and is closely packed by being doubled about upon itself forming *convolutions* or windings. Certain portions of it receive different names. Thus the upper foot or so, is called the *duodenum.* About half of the remainder is called the *jejunum:* and the last half the *ileum.* The large intestine in which the ileum terminates, measures about five feet and becomes somewhat narrower as it proceeds. It is distinguished, not only by its exceeding the small intestine in width, but also by its conrse being remarkable for it nearly surrounds, as it were, he convolutions of the small intestine. It is divided into, first, the *cæcum:* secondly, the *colon:* lastly, the terminal part, or *rectum.*

The convolutions of the small intestine occupy the middle and lower part of the abdomen, and overlap the colon.

The Stomach, in which a certain quantity of food has to be accommodated for from two to three hours, to be acted on by the gastric juice, is firmly held to the diaphragm by the œsophagus at one end, and to the back of the abdomen by the duodenum at the other. Its middle part is more free, so that it is tilted upwards and forwards as it becomes filled, and falls back and down again as it is emptied.

All the parts I have mentioned are held in position within the abdomen by attachments of various muscular and nervous tissues, and especially by a thin, smooth, and transparent membrane called the *Peritonæum.* The abdominal muscles also largely assist in supporting the contained organs.

The stomach possesses a muscular coat. During digestion it undergoes a remarkable series of slow contractions of a wave-like character, passing in regular succession along it, from its upper to its lower end. These are called peristaltic movements, and they are involuntary movements excited by the presence of the food, for they cease when the stomach is empty. Under ordinary circumstances they are *not* accompanied by sensation ; but we all know that with indigestion, matters may be very much altered in this respect !

By these movements the partially digested food is gradually passed on into the commencement of the small intestines—the *duodenum*—and thence onward, until finally the non-nutritious portion is expelled from the body.

The Stomach is supplied with numerous little tubes like little flasks, opening at one end into the stomach, but closed at the other end. These *gastric glands* or *follicles* secrete the *gastric juice* in very large quantities—as much during digestion as a pint in an hour ; and therefore several pints daily. It is a somewhat acid fluid, containing a peculiar animal substance called *pepsin,* and which causes the rapid solution of such compounds as albumen, fibrin, gluten, gelatine, &c.

When the partly digested food passes into the duodenum it receives the admixture of bile and pancreatic juice : and that leads us to a consideration of the *Liver, with the Gall-Bladder, and the Pancreas.*

The *liver* is a large, firm, reddish brown organ placed in the upper part of the abdominal cavity, in front of the aorta and vena cava, occupying chiefly the right side, though it stretches across a little to the left side also. It weighs about four pounds in the adult. Its upper surface fits accurately into the arch of the diaphragm above, while its under surface rests upon the stomach and duodenum. By ligaments, it is connected firmly with the diaphragm; it ascends and descends with that muscle during inspiration and expiration, as well as undergoing slight changes according to the attitude of the body : but no "dragging" takes place : for the liver is supported by the muscular walls of the abdomen.

The substance of the liver consists of an innumerable number of little masses, about the size of pins' heads, which are held together by the finest blood vessels, and there is nothing more remarkable than the circulation of the blood through the liver, because it is exceptional in the body. It receives a small quantity of arterial blood through a branch from the aorta, but it is chiefly supplied by the *portal vein with venous blood already employed in circulating through the other abdominal digestive organs.* This blood, having, as it is believed, undergone remarkable changes in the liver, finally escapes into the ascending vena cava : and so reaches the heart.

So much for the blood circulating through the liver, but during this circulation the "*Bile*" is secreted, and this bile is finally poured into the commencement of the small intestine *(the duodenum)* where it mingles in company with the pancreatic juice with the chyme, descending from the stomach. Bile is secreted at the rate of about two and a half pints in twenty-four hours. It is a thin greenish yellow fluid ; and there is no doubt that it helps to stimulate the muscular coat of the intestine to a healthy peristaltic action : but in addition to secreting bile, the liver has been proved to perform other important functions, as for example, removing certain injurious matters from the blood.

The *Gall Bladder* is a small bladder capable of holding two tablespoonsful of fluid. Its office is to receive such bile as not being immediately required, is prevented from entering the duodenum: but flows into this temporary reservoir. If required it is propelled into the duodenum: and this is a beautiful example of *reflex action.* If *chyme* is in the duodenum and not sufficient bile, the nerves are stimulated, the gall bladder contracts, and whatever bile it has is sent on!

The *Pancreas or Sweetbread* is a gland placed deeply in the abdomen behind the stomach. It weighs about three ounces. The fluid it secretes is somewhat similar to the saliva, and enters the duodenum by the same duct through which the bile enters.

Let us now shortly review the digestive process, which by Professor Marshall has been exhaustively recapitulated as follows :—

"*The vital mechanics of the acts of mastication and deglutition,—the churning movements* given to the food as it is gently compressed by the stomach,—the timely introduction of the bile and the pancreatic juice,—the relative fixity and mobility of the different parts,—its lubrication throughout by a protective mucus, its curious creeping peristaltic action, insuring the onward movements of the food,—and aiding the absorption of its nutrient portions,—besides and beyond all this the vital chemistry of the digestive process,—the special action of the mucus, the saliva, the gastric juice, the pancreatic fluid,—the intestinal juices, each yielding many ounces of fluid daily—then the twofold method of absorption, by the blood-vessels and by the lacteals—the purifying influence of the liver,—present a combination of wonderful contrivances and actions, not more perfect, but surpassing in complexity of detail, the comparatively simple structure and functions of respiration and circulation."

May I personally add one sentence to this admirable summary of Professor Marshall:—You may recollect an article which when it was published made some sensation—"Is Life Worth Living?" The answer given was—"That Depends upon the Liver!" Might we not say upon the amount of bile kept as a reserve in the gall bladder? And mind, all joking apart, it is of *immense* importance that the functions of the liver should *always* be carefully looked after. Many a man has committed suicide because his gall bladder did not contain a sufficient *reserve of bile:* and I think Shakespeare said something about, "green jealousy," was it not? but I forget the quotation.

I must however say *one* word about the *Spleen*, (it is called in animals the "*Milt.*") It is a gland situated in contact with the left end of the stomach. It is of little practical importance. It is supposed to be a sort of safety valve when the circulation is obstructed in the liver, but this is doubtful; and as it can be cut out of animals without their being any the worse for its loss, I think we may dismiss it with this brief acknowledgment that it exists.

NERVE VIBRATION.

The principle of "*Nerve Vibration*" (so called,) is the action upon a *Nerve*, by mechanical vibration, or "*tapping*," applied by a special instrument with its accessories, as designed by Dr Mortimer Granville.*

The benefit derived from such a method of treatment becomes comprehensible to all of us when we recall to mind—as must be so largely in our experience—how simple friction of the skin will sometimes soothe very acute pain.

The essential part of the apparatus used, is shown in Fig. 1. The "*Percuteur*," is, as you see, held in the hand of the operator, and its vibrations may be brought into action either by the agency of electricity or by clockwork. A is a slide by which the speed and the power of the stroke may be regulated. B, is the pointed ivory hammer, or other fitting, by which the percussion is made. A flat-headed hammer, or a wire brush, may be substituted for the ivory point.

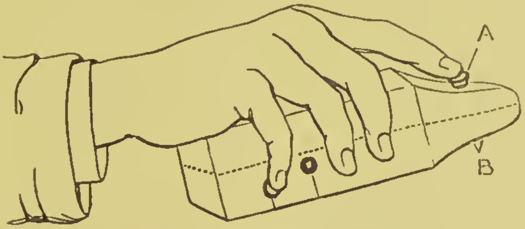

Fig 1.

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*"Nerve Vibration and Excitation" by J. Mortimer Granville, M.D. &c. J. & A. Churchill, New Burlington Street.

The complete apparatus and accessories are shown in the following figures, which Dr. Granville has kindly placed at my service; and it can be obtained from Messrs. John Weiss & Son, Surgical Instrument Makers, 287, Oxford Street, London, W.

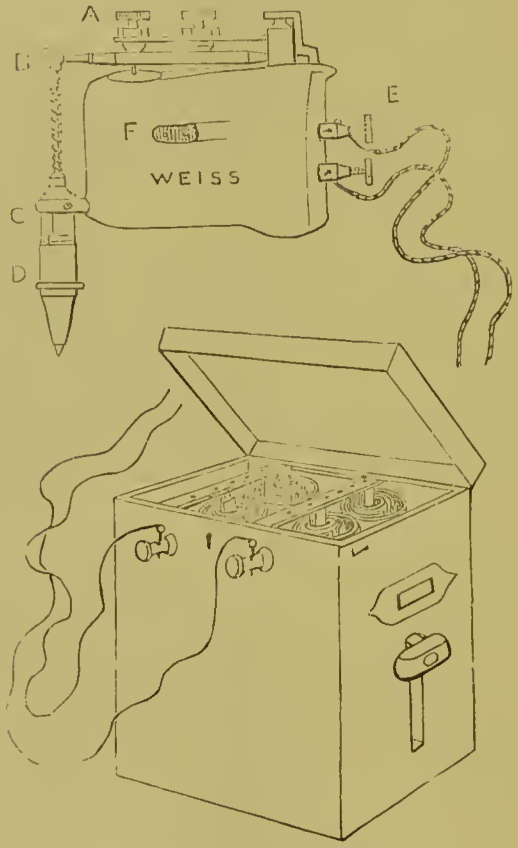

FIG 2. The latest form of Percuteur is shown in the upper part of Figure: and the second Figure shows a Battery of four Bunsen's Cells, with which to place the Percuteur in action.

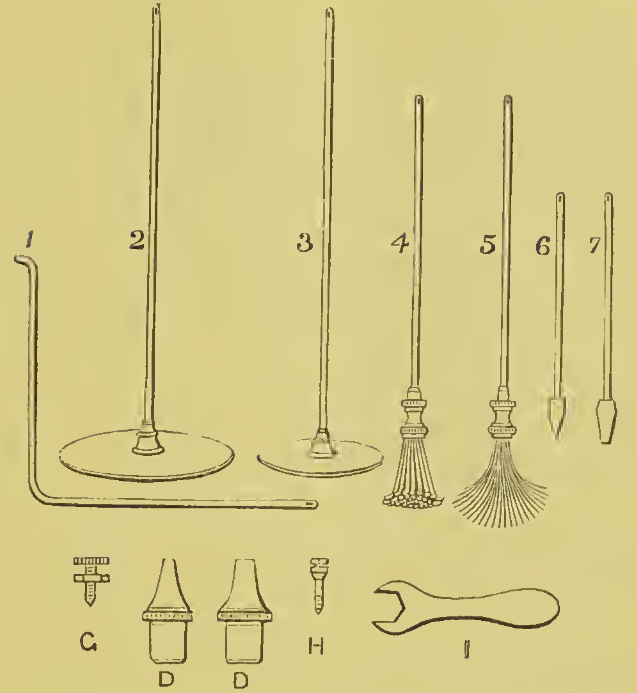

FIG. 3. The various Accessories of the Apparatus.

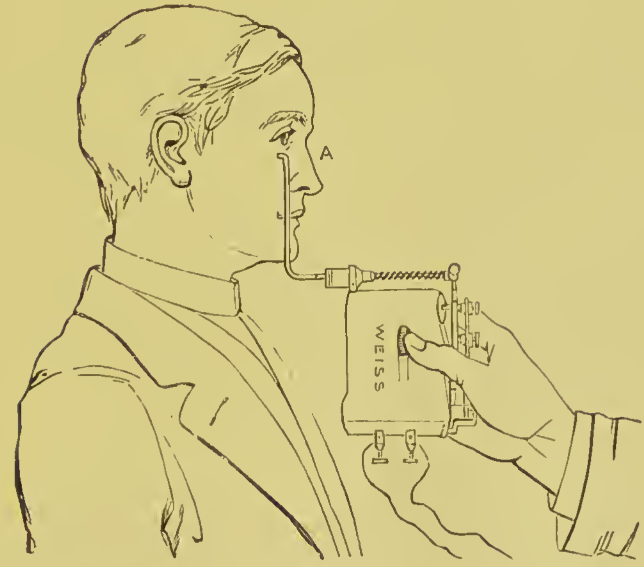

FIG. 4. One method of applying Nerve Vibration for the relief of Facial Neuralgia.

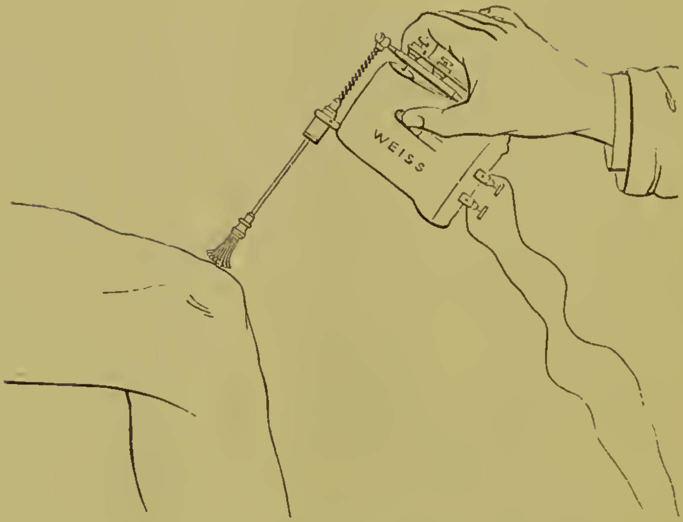

FIG. 5. Method of application with the "wire brush."

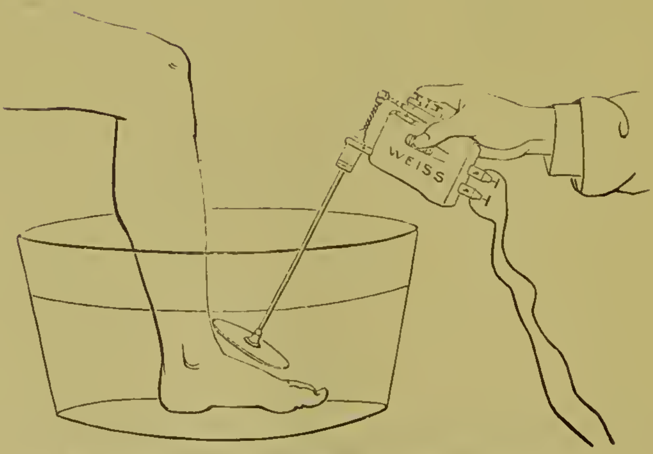

FIG. 6. Method of applying the Percuteur in a Bath.

The *rapidity* with which the "little blows"—if I may so call them—can be administered, may be regulated to a nicety, and Dr. Granville attaches much importance in treatment to this exact regulation of rapidity. He considers that a high number of vibrations is required to relieve a dull, aching, or what may be called a "massive," or "grinding pain," while, on the contrary, a "*sharp*" pain is arrested by a slower vibration. As an instance: a medical man complained of severe neuralgic pain, resulting, as he supposed, from a blow by a cricket ball. The application of the instrument entirely relieved the pain, probably by improving the nutrition; and the net result of the general treatment would seem to be that by it we have a means of eliciting function, and stimulating nutrition, which, *in appropriate cases*, surpasses for directness, and rapidity of action, any other system or method.

Relieving and "*Curing*" pain are two totally different processes, and it is only with the latter that nerve vibration has any concern.

Every organ of the body—as for instance, from the liver to the Parotid Gland—may be made to perform its proper function by exciting the nerve which supplies it, with energy. In this way the Liver may be unloaded, and also inveterate torpidity of the intestines. Again, Locomotor Ataxy has been removed or sensibly ameliorated; and the general improvement may be fairly described as having been astonishing. But, remember, Nerve Vibration, is not the rival of Electricity, but it is sometimes a substitute for it; and the two agents, as with Massage and Electricity, may be wisely used in conjunction or alternately. *Both* will greatly help to replace the use of Drugs!

We must not forget that if we are to attain our object, the number of blows given by the percuteur *must be varied.* As a rule, it is better to attack a large nerve, or a "numbness," with a high rate of vibrations; and a very acute pain, with comparative slow and large vibrations. It is of importance, in the relief of pain, to determine as precisely as possible the *exact point of the pain*, and to act upon that point alone. You know how I have, again and again, impressed upon you the importance of this question when we are applying Electricity. The percuteurs have two contact pins, one at the extremity, and the other half way along the length of the vibrator; and these respectively give different degrees of vibration.

When the pain is relieved withdraw the percuteur instantly.

The application should be precise and *very light,* and, as I have just said, it should cease the very moment the pain ceases. The aim should always be to gain the desired result with the least force, and with the least duration of percussion, but remember *that by mismanagement failure may be secured and the treatment discredited.*

The relief of pain, though by no means the most important, is undoubtedly one of the most urgent and widely persistent claims which humanity makes on the Physician and his art, and any thing that will help him must be regarded as a great boon to sufferers.

Nerve vibration often helps us to control disorderly movements, especially by percussion down the spine, and similarly it has been found most beneficial in certain cases in allaying excitation of the brain. Again *by varying the rapidity of the vibrations*, it may act as a stimulant, rather than as a calming influence; and in certain cases of impairment of sight, or the impairment of other special senses, it has been found most useful. For example, we know that a sharp blow upon the eyeball will produce a sensation of seeing light; and gentle and daily vibration of the globe of the eye, through the closed lid has often been largely beneficial.

The great principle of the treatment is this:—Mechanical vibrations can be communicated to the Nerves; and through the nerves to the Nerve Centres, to the Brain and Spinal Cord. The point to be remembered is that the influence is two-fold—first on the nerve, and then on the central part of the nervous system, which has knowledge of that nerve influence, and which performs the mental part of perception.

Some very remarkable cases have occurred of rapid recovery after confirmed Nervous Debility, extending over many years. The intense neuralgia, which is often found in the spinal region, is often quickly dissipated, and in one case Nerve Vibration, administered daily for a fortnight, removed a neuralgia which had involved entire disability for exercise, during several preceding years.

Indigestion and Constipation are often relieved, particularly that common form which depends upon want of muscular movement in the stomach and intestines.

These Lectures have been *only a sketch*, and I fear a most imperfect sketch of methods of treatment of great utility—methods, the knowledge of which is daily becoming more essential to every practitioner of medicine or surgery; for the revolt against drug drinking is becoming well nigh universal; and methods which, on account of the time taken up, *must* be committed under medical supervision to suitably-trained assistants.

I observe that a "Massage Institution," upon an enormous scale is about to be opened upon the Continent, but although "no man is a prophet in his own country," it *does* seem to me little to the credit of English medicine, if it should be found necessary to send our patients abroad for massage and electrical treatment.

The *theory* of our treatment is, as you know, the mere "*skeleton*,"—the "*dry bones*," but I *do sincerely hope and trust* that you have all seen that our "*framework*" became clothed with flesh, and had breathed into it the breath of life, when, as in our daily and practical application of the principles I have endeavoured to place clearly before you, we succeeded; if not, as we always desire to succeed in curing, at any rate, in *greatly* alleviating the sufferings of the many poor patients who daily crowded our Hospital Waiting rooms.

And now, Good-bye. I wish you a very happy holiday, and I shall be glad to see you all back again at the beginning of our next Session.

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